

Service Manual

ORDER NO.
ARP3523

FLAT SCREEN TV

KRP-500A

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-500A	European model	AC 220 V to 240 V	
KRP-500A	General model	AC 110 V to 240 V	
KRP-500A	Chinese model	AC 220 V to 240 V	

This product is component of system.

<European model>

Component	System	Service Manual	Remarks
FLAT SCREEN TV	KRP-500A	ARP3523	This manual
PLASMA DISPLAY	KRP-500P/WYSIXK5, /WYS5	ARP3506	
MEDIA RECEIVER	KRP-M01/WYSIXK5, /WYSXJ5	ARP3508	

<General model>

Component	System	Service Manual	Remarks
FLAT SCREEN TV	KRP-500A	ARP3523	This manual
PLASMA DISPLAY	KRP-500P/LFT	ARP3506	
MEDIA RECEIVER	KRP-M01/LFTXJ	ARP3519	

<Chinese model>

Component	System	Service Manual	Remarks
FLAT SCREEN TV	KRP-500A	ARP3523	This manual
PLASMA DISPLAY	KRP-500P/WA5	ARP3506	
MEDIA RECEIVER	KRP-M01/WAXJ5	ARP3519	

Pioneer

Service Manual



KRP-500P

ORDER NO.
ARP3506

PLASMA DISPLAY

KRP-500P

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-500P	WYSIXK5	AC 220 V to 240 V	
KRP-500P	WYS5	AC 220 V to 240 V	
KRP-500P	LFT	AC 110 V to 240 V	
KRP-500P	WA5	AC 220 V to 240 V	



For details, refer to "Important Check Points for good servicing".

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SAFETY INFORMATION



This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.

6. Perform the following precautions against unwanted radiation and rise in internal temperature.
 - Always return the internal wiring to the original styling.
 - Attach parts (Gasket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
 - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
 - Make sure that the panel vent does not break. (Check that the cover is attached.)
 - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
 - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4 M Ω .

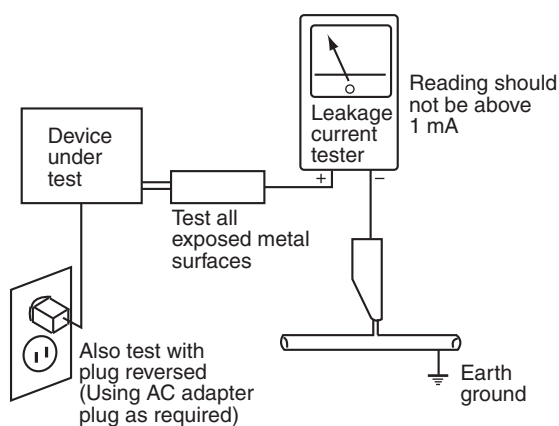
The below 4 M Ω resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

A

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

F

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

- Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 NOTES SPECIFIC TO THIS PRODUCT

- In same cases, there are silicon sheets on back side of POWER SUPPLY Unit, X DRIVE Assy and Y DRIVE Assy due to heat release of these boards to panel chassis. When replacing these boards, check backside of them and if silicon sheets are on there, surely put these silicon sheets again to the original location of them.

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer. If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.



1. Power Cord
2. AC Inlet
3. Power Switch
4. Fuse (In the POWER SUPPLY Unit)
5. STB Transformer and Converter Transformer
(In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock. The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

50F X DRIVE Assy	.....	(205 V)
50F Y DRIVE Assy	.....	(-280 V to 420 V)
50F SCAN A Assy	.....	(-280 V to 420 V)
50F SCAN B Assy	.....	(-280 V to 420 V)

-  : Part is Charged Section.
-  : Part is the High Voltage Generating Points other than the Charged Section.

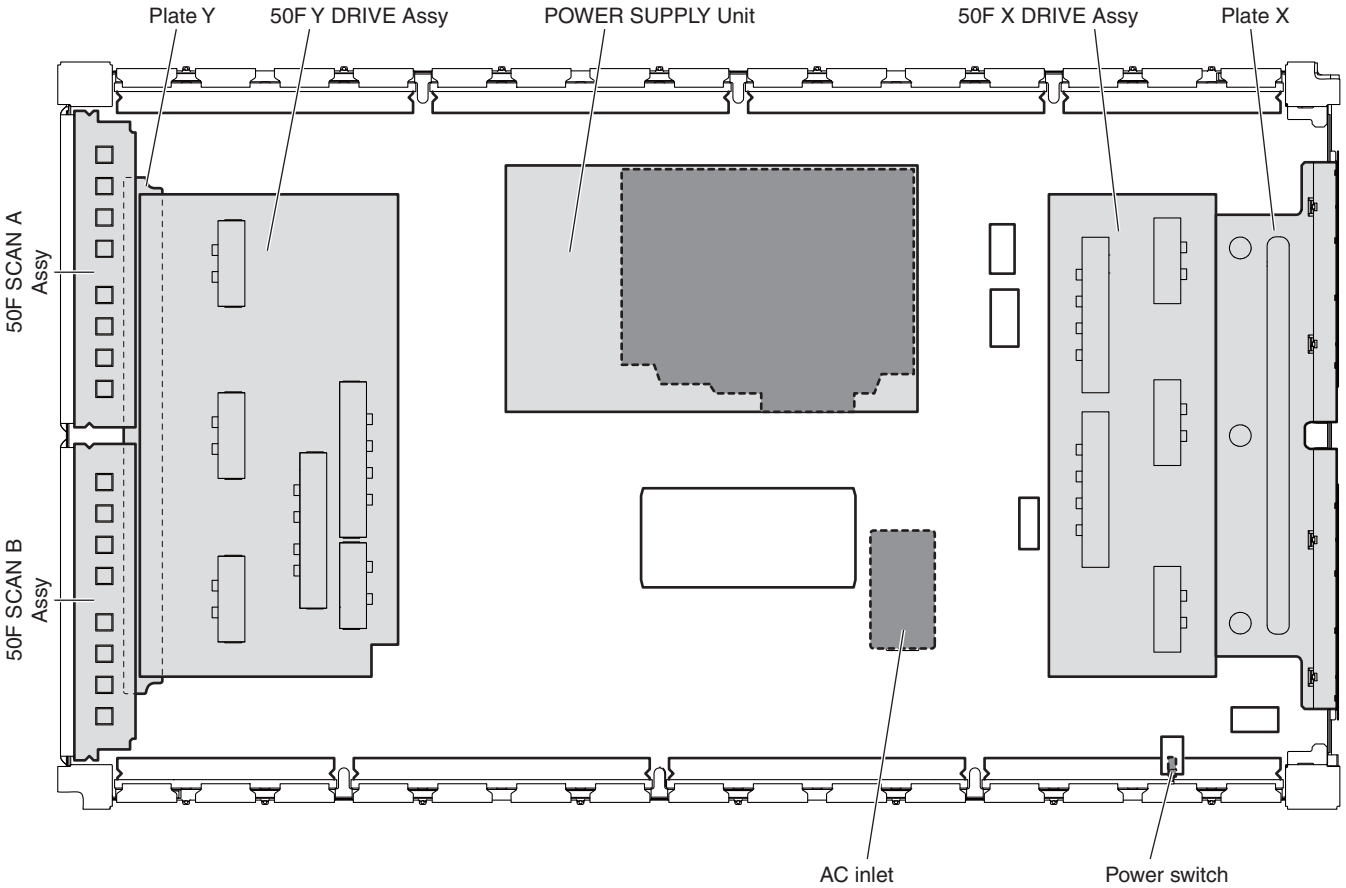


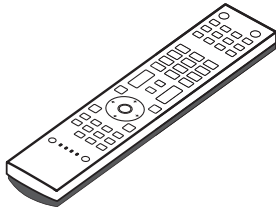
Fig. High Voltage Generating Point (Rear view)

2. SPECIFICATIONS

2.1 ACCESSORIES

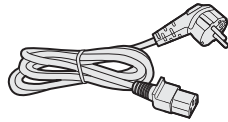
■ KRP-500P/WYSIXK5

- Remote control unit (AXD1562)



- Power cable

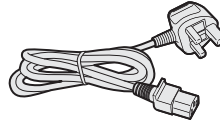
(ADG1214)



For Europe, except UK and Republic of Ireland

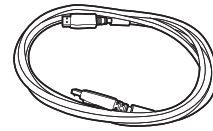
Only the power cable appropriate for your country or region is supplied:

(ADG1223)

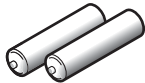


For UK and Republic of Ireland

- System cable (2.9 m) (ADF1041)



- Alkaline dry cell battery (LR6, AA) (2)



(for remote control unit)

- Ferrite core (ATX1039)(CTX1089)

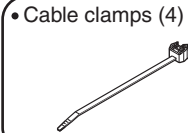


Ferrite core x 2 (Grey x 1, Black x 1)



Cable tie (for ferrite core)

- Binder Assy (AEC2158)



- Cable clamps (4)

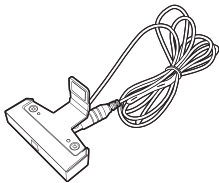
- Cleaning cloth (AED1285)



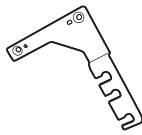
- Cable guide (2) (AEC2167)



- Color sensor module (AXF1196)



Colour Sensor



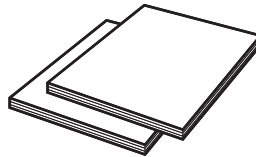
Colour Sensor Bracket (when attached to the top right of the rear panel)

Screw x 2 (M5 x 8 mm)

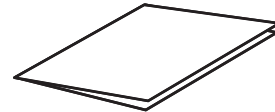


Cable guide

- Operating instructions (2) (ARC1609, ARE1494)

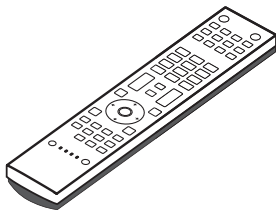


- Warranty card



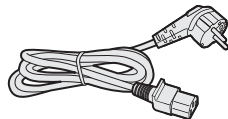
■ KRP-500P/WYS5

- Remote control unit (AXD1562)



- Power cable

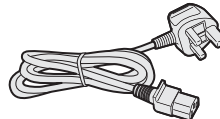
(ADG1214)



For Europe, except UK and Republic of Ireland

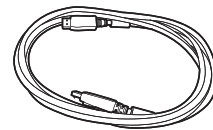
Only the power cable appropriate for your country or region is supplied:

(ADG1223)

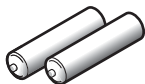


For UK and Republic of Ireland

- System cable (2.9 m) (ADF1041)

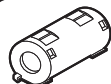


- Alkaline dry cell battery (LR6, AA) (2)



(for remote control unit)

- Ferrite core (ATX1039)(CTX1089)

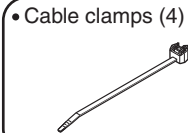


Ferrite core x 2 (Grey x 1, Black x 1)



Cable tie (for ferrite core)

- Binder Assy (AEC2158)



- Cable clamps (4)

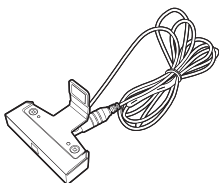
- Cleaning cloth (AED1285)



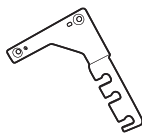
- Cable guide (2) (AEC2167)



- Color sensor module (AXF1196)



Colour Sensor



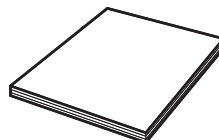
Colour Sensor Bracket (when attached to the top right of the rear panel)

Screw x 2 (M5 x 8 mm)

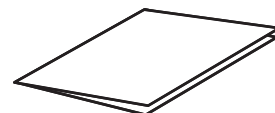


Cable guide

- Operating instructions (ARC1619)

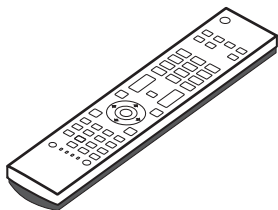


- Warranty card



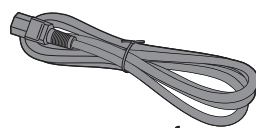
KRP-500P/LFT

- Remote control unit (AXD1567)

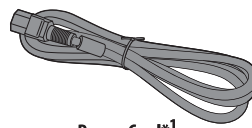


- Power cable

*1 Either one of the power cords is supplied depending on the country.

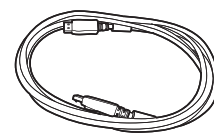


Power Cord*1

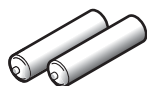


Power Cord*1
(AXY1194)
(with a ferrite core attached)

- System cable (2.9 m) (ADF1041)

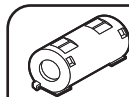


- Dry cell battery (R6, AA) (2)



(for remote control unit)

- Ferrite core (ATX1039)



Ferrite core



Cable tie
(for ferrite core)

- Binder Assy (AEC2158)

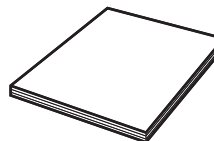
- Cable clamps (4)



- Cleaning cloth (AED1285)



- Operating instructions (ARE1495)

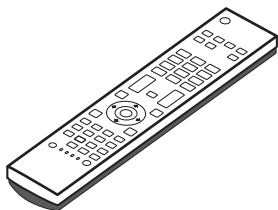


- Warranty card

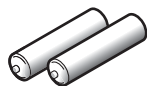


KRP-500P/WA5

- Remote control unit (AXD1569)

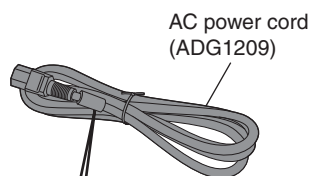


- Dry cell battery (R6, AA) (2)



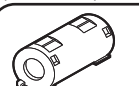
(for remote control unit)

- Power cable



AC power cord
(ADG1209)

- Ferrite core (ATX1039)



Ferrite core



Cable tie
(for ferrite core)

- When only the cable tie is necessary, please order a nylon binder (AEC-093).

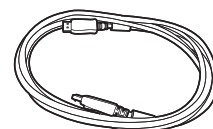


- Binder Assy (AEC2158)

- Cable clamps (4)



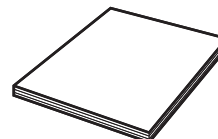
- System cable (2.9 m) (ADF1041)



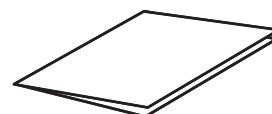
- Cleaning cloth (AED1285)



- Operating instructions (ARC1610)



- Warranty card



2.2 SPECIFICATIONS

A

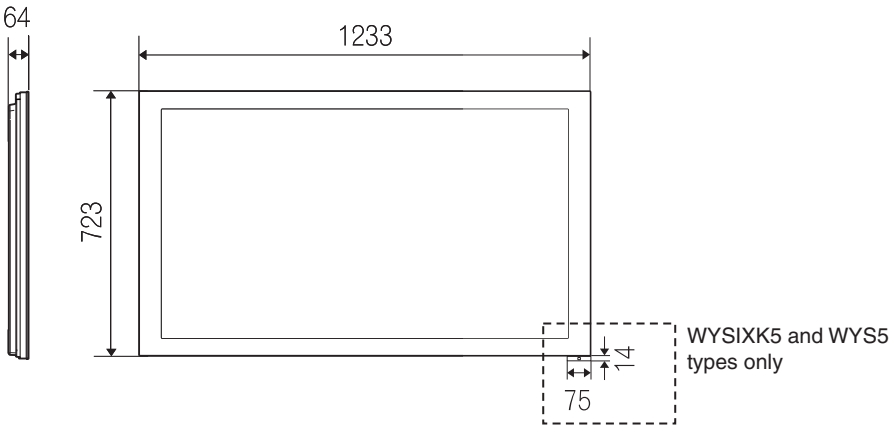
Item		50" display, model: KRP-500P
Number of pixels		1920 x 1080 pixels
Audio amplifier		18 W + 18 W (1 kHz, 10 %, 6 Ω)
Sound Effect		SRS FOCUS/SRS/SRS TruBass/SRS Definition
Power Requirements		220 V to 240 V AC, 50 Hz/60 Hz, 388 W (0.3 W Standby) : For WYSIXK5 and WYS5 types 110 V to 240 V AC, 50 Hz/60 Hz, 386 W (0.2 W Standby/110 V AC) : For LFT type 220 V to 240 V AC, 50 Hz/60 Hz, 409 W (0.4 W Standby) : For WA5 type
Weight		Main unit: 31.4 kg (69.2 lbs) Colour Sensor: 0.1 kg (0.2 lbs) : WYSIXK5 and WYS5 types only
Terminals Rear	SPEAKERS	6 Ω to 16 Ω
	SYSTEM CABLE	1
	Colour Sensor	1

B

Dimensions (Display)

KRP-500P
Unit: mm

C



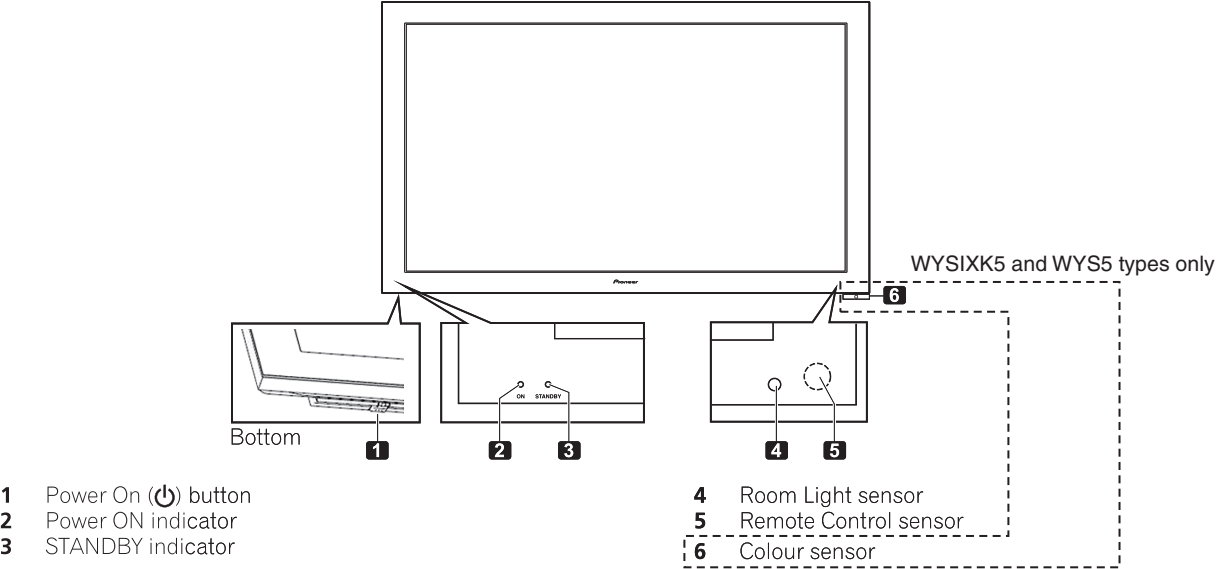
D

(Colour sensor attached to the bottom right of the front panel as recommended)

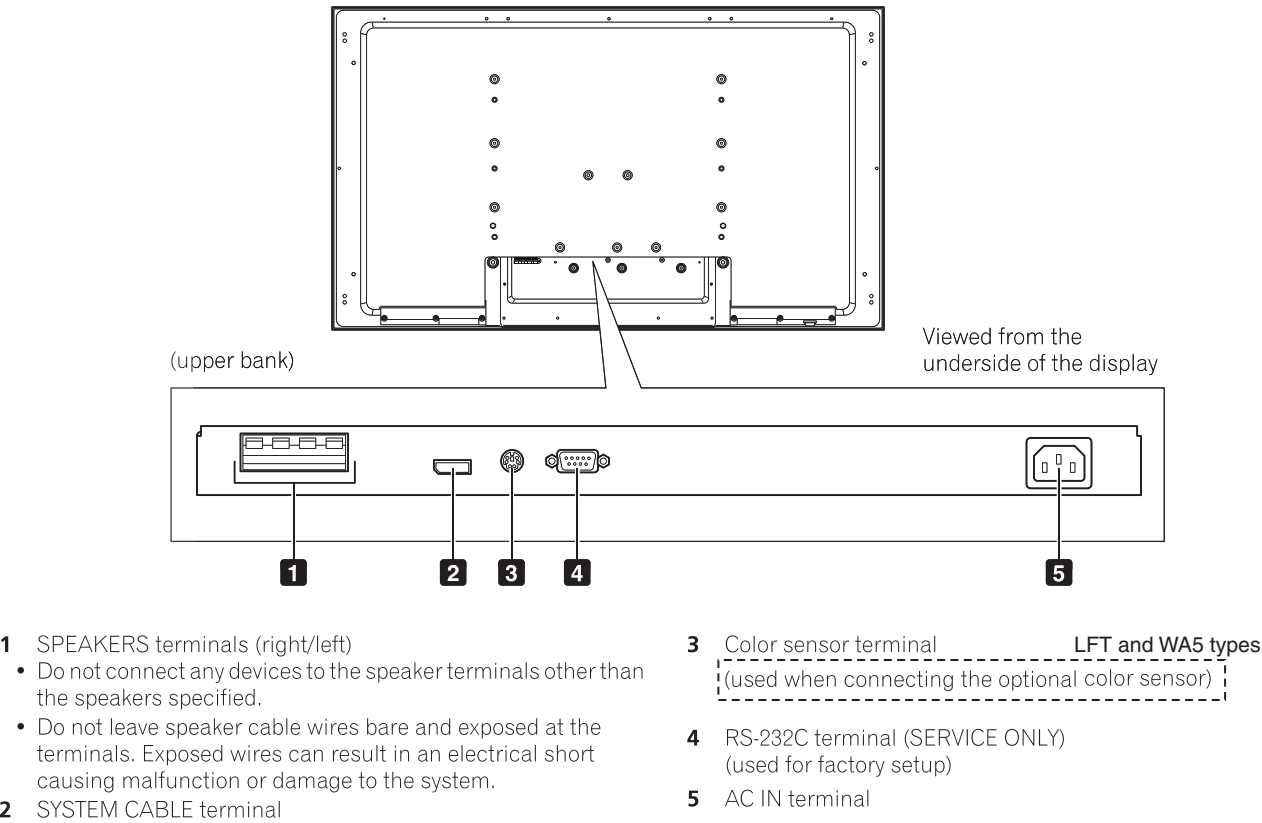
E

F

(Front)



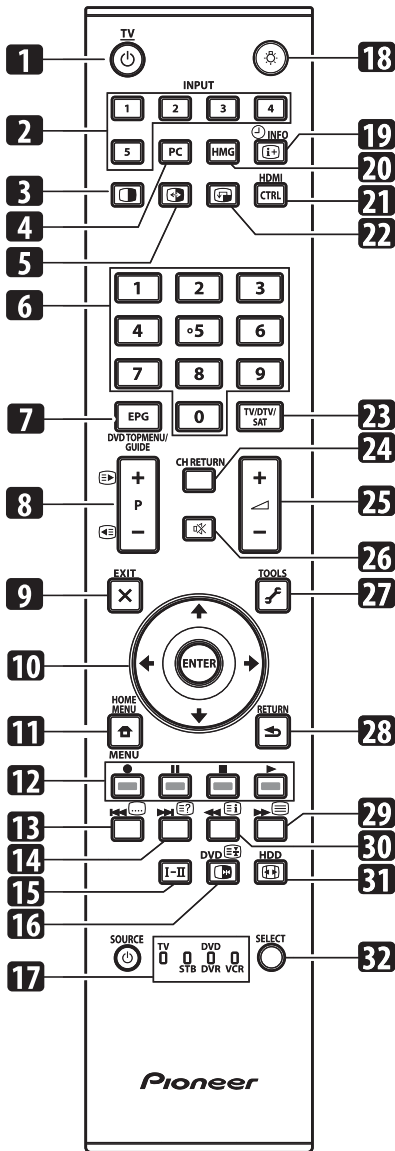
(Rear)



A

■ Remote Control Unit (for WYSIXK5 and WYS5 types)

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 **TV** : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the flat screen TV. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")
- 3 **□**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 4 **PC**: Selects the PC terminal as an input source.
- 5 **↔**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

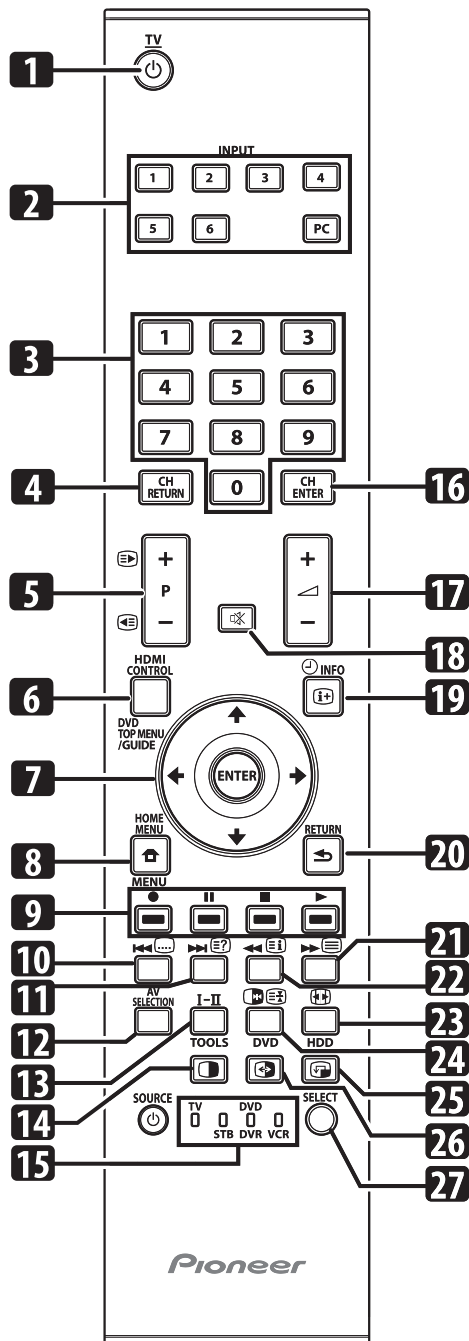
- 6 **0 to 9**: TV/External input mode: Selects a channel.
Teletext mode: Selects a page.
Turns the power on when the STANDBY indicator lights red.
- 7 **EPG**: Displays the Electronic Programme Guide in DTV/SAT (Satellite) input mode.
- 8 **P+/P-**: TV/External input mode: Selects a channel.
⇨/⇩: Teletext mode: Selects a page.
- 9 **X EXIT**: Returns to the normal screen in one step.
- 10 **↑/↓/←/→**: Selects a desired item on the setting screen.
ENTER: Executes a command.
- 11 **HOME MENU**: Displays the HOME MENU screen.
- 12 **Colour (RED/GREEN/YELLOW/BLUE)**: Controls a BD player for HDMI Control functions only.
- 13 **...**: Jumps to Teletext subtitle page.
Turns subtitle on and off in DTV input mode depending on the broadcast.
- 14 **?**: Displays hidden characters.
- 15 **I-II**: Sets the sound multiplex mode.
- 16 **⏸**: TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function.
⏹: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 17 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 18 **Ⓞ**: Lights up buttons.
Lights turn off if no operations are performed within five seconds. This is used for remote control use in dark locations.
- 19 **Ⓜ** **Ⓜ** **INFO**: Displays the channel information.
Displays the banner information.
- 20 **HMG (Home Media Gallery)**: Displays the Home Media Gallery screen.
- 21 **HDMI CTRL**: Displays the HDMI Control menu.
- 22 **Ⓜ**: Moves the location of the small screen when in the picture-in-picture mode.
- 23 **TV/DTV/SAT**: Switches the mode among TV, DTV and SAT.
- 24 **CH RETURN**: Returns to the previous channel.
- 25 **△ + / ▽ -**: Sets the volume.
- 26 **Ⓜ**: Mutes the sound.
- 27 **🔧 TOOLS**: Displays the TOOLS Menu.
- 28 **↶ RETURN**: Restores the previous menu screen.
- 29 **Ⓜ**: Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 30 **Ⓜ**: Displays an Index page for the CEEFAX/FLOF format.
Displays a TOP Over View page for the TOP format.
- 31 **Ⓜ**: Selects the screen size.
- 32 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display panel.

Remote Control Unit (for LFT type)

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5", "INPUT 6" or "PC")

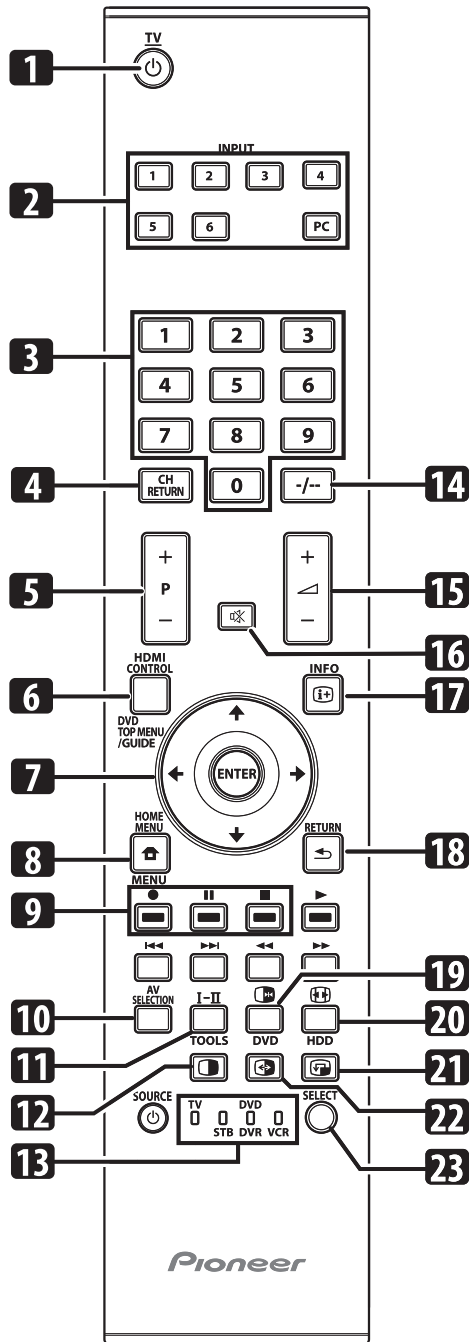
- 3 **0 to 9**: TV/External input mode: Selects a channel. Teletext mode: Selects a page. Turns the power on when the STANDBY indicator lights red.
- 4 **CH RETURN**: Returns to the previously selected channel.
- 5 **P+/P-**: TV/External input mode: Selects a channel. : Teletext mode: Selects a page.
- 6 **HDMI CONTROL**: Displays the HDMI Control menu.
- 7 : Selects a desired item on the setting screen. **ENTER**: Executes a command.
- 8 **HOME MENU**: TV/External Input mode: Displays the HOME MENU screen.
- 9 **Color (RED/GREEN/YELLOW/BLUE)**: Teletext mode: Selects a page.
- 10 : Jumps to the Teletext subtitle page.
- 11 : Displays hidden characters.
- 12 **AV SELECTION**: Selects audio and video settings. (AV source: OPTIMUM, STANDARD, DYNAMIC, MOVIE, GAME, SPORT, USER. PC source: STANDARD, USER.)
- 13 **I-II**: Sets the sound multiplex mode.
- 14 : Press to select 2-screen, picture-in-picture or single screen mode.
- 15 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 16 **CH ENTER**: Executes a channel selection by the number buttons.
- 17 : Sets the volume.
- 18 : Mutes the sound.
- 19 **INFO**: TV/External input mode: Displays the channel information.
- 20 **RETURN**: Restores the previous menu screen.
- 21 : Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 22 : Teletext mode: Displays an Index page for the CEEFAX/FLOF format.
- 23 : TV/External input mode: Selects the screen size.
- 24 : TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function. : Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 25 : Moves the position of the sub screen when in picture-in-picture mode.
- 26 : Swaps the main and sub screens when in picture-in-picture or 2-screen mode.
- 27 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display panel.

Remote Control Unit (for WA5 type)

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5", "INPUT 6" or "PC")
- 3 **0 to 9**: TV/External input mode: Selects a channel. Turns the power on when the STANDBY indicator lights red.
- 4 **CH RETURN**: Returns to the previously selected channel.
- 5 **P+/P-**: TV/External input mode: Selects a channel.
- 6 **HDMI CONTROL**: Displays the HDMI Control menu.
- 7 : Selects a desired item on the setting screen.
ENTER: Executes a command.
- 8 **HOME MENU**: TV/External Input mode: Displays the HOME MENU screen.
- 9 : Used when operating the Home Gallery function.
- 10 **AV SELECTION**: Selects audio and video settings. (AV source: OPTIMUM, STANDARD, DYNAMIC, MOVIE, GAME, SPORT, USER. PC source: STANDARD, USER.)
- 11 **I-II**: Sets the sound multiplex mode.
- 12 : Press to select 2-screen, picture in picture or single screen mode.
- 13 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 14 **-/--**: Executes a channel selection.
- 15 : Sets the volume.
- 16 : Mutes the sound.
- 17 **INFO**: TV/External input mode: Displays the channel information.
- 18 **RETURN**: Restores the previous menu screen.
- 19 : TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function.
- 20 : TV/External input mode: Selects the screen size.
- 21 : Moves the position of the sub screen when in picture in picture mode.
- 22 : Swaps the main and sub screens when in picture in picture or 2-screen mode.
- 23 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display.

Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

Cleaning



Name	Part No.	Remarks
Cleaning paper	GED-008	Used to fan cleaning. Refer to “9.7 CHASSIS SECTION (1/2)”.

3.2 QUICK REFERENCE

Quick Reference upon Service Visit ①
Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

- ① **Rear case**
When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".
- ② **Attaching screws for the HDMI and system cable terminals**
When attaching the HDMI and system cable terminals after replacing the Assembly, secure the terminals manually with a screwdriver, but not with an electric screwdriver.
If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

- ① **How to discharge before replacing the Assys**
A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:
A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.
For details, see "5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION".
- ② **On the settings after replacement of the Assys**
Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

- ① **Setting in Factory mode**
After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD		SD		
No. of LEDs flashing	MR	Panel	No. of LEDs flashing	MR
Red 1	MR_POWER	SQ_LSI	Blue 1	
	Panel	Module Device communication	Blue 2	
Red 2	POWER	DIGITAL-RST2	Blue 3	
Red 3	SCAN	Panel temperature	Blue 4	
Red 4	SCN-5V	Audio	Blue 5	Audio (MSP)
Red 6	Y-DCDC	Module microcomputer communication	Blue 6	
Red 7	Y-SUS		Blue 7	Main 3-wire serial communication
Red 8	ADRS	Panel main IIC communication	Blue 8	Main IIC communication
Red 10	X-DCDC		Blue 9	Main microcomputer communication
Red 11	X-SUS	FAN	Blue 10	FAN
Red 12	DIG-DCDC	Unit high temperature	Blue 11	Unit high temperature
Red 15	UNKNOWN		Blue 12	D-TUNER communication
		DC-IN	Blue 13	RST2/RST4
		Panel main EEPROM	Blue 15	Main EEPROM

Special LED Patterns		Subcategory confirmation procedure
Panel	MR	
PD (2-15) 	PD (1) 	If the DISPLAY key is pressed during shutdown, the orange LED flashes. (MR only)
SD (1-15) 	SD (7-15) 	
System failure 	Standalone operation (MRMS01) 	SD SD Subcategory
MR on standby (Red LED lit)	Rewriting of softwa (PC) 	
Rewriting of software (PC) 	Rewriting of softwa (USB) 	8
NO 	After rewriting is completed successfully, the orange LED goes dark.	
BACKUP 	Rewriting of software failed (USB) 	13
For special patterns other than described here, see 5.1[1].		
Commands for shifting between standalone and system operations		Other SD main categories have subcategories. For details, see 5.4[2].
Panel	MR	
To Standalone operation: SYSS00	To Standalone operation: MRMS01	1 Tuner 1
To System operation: SYSS01	To System operation: MRMS00		2 MSP/MAP
Note: After issuing a command, unplug then again plug in the AC power cord.		3 AV Switch
		4 RGB Switch
		5 Main VDEC
		6 VDEC-SDRAM
		7 AD/PLL
		8 HDMI
		9 Display Port Tx
		1 RST2
		2 RST4

How to locate several items on the Factory menu

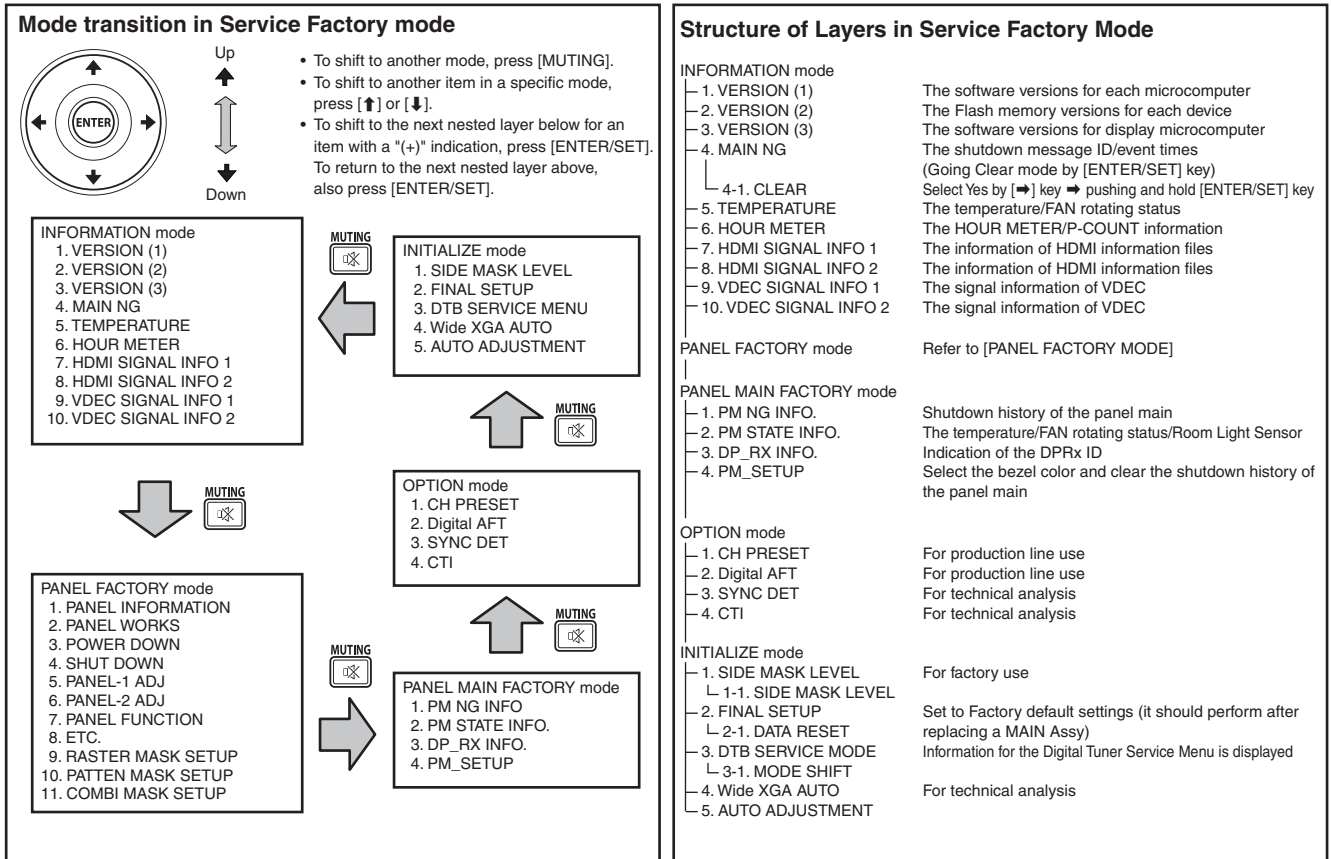
- { } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication
1. **Confirmation of accumulated power-on time and power-on count**
Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)
2. **Confirmation of the Power-down and Shutdown histories**
① **Panel system**
PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] two times.)
SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)
② **MR section**
Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] two times.)
③ **Panel main section**
Select {PANEL MAIN FACTORY} then {PM NG INFO}.
After entering Factory mode, press [MUTING] twice, then press [ENTER/SET].
3. **How to display the Mask indication**
① **Mask indication in the panel side**
1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
2. Press [ENTER/SET], then select a Mask indication, using [↑] or [↓].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. **DIGITAL Assy (Panel): Transfer of backup data**
① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
② Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.
2. **MAIN BLOCK Assy (MR), MAIN Assy (Panel): Execution of FINAL SETUP.**
① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
② Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.
3. **POWER SUPPLY Unit (Panel): Clearance of the accumulated power-on count and maximum temperature value**
① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
② Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.
4. **Other Assys (panel): Clearance of the maximum temperature value**
① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
② Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode



Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
1. VOL SUS	
2. VOL OFFSET	
.....	
10. RESET1ST_KSB	
.....	
25. SUS FREQ	
6. PANEL-2 ADJ (+)	
1. R-HIGH	
2. G-HIGH	
.....	
6. B-LOW	
7. ABL	
7. PANEL FUNCTION (+)	
1. R-LEVEL	
.....	

Settings required after replacement of the panel: 1. VOL SUS, 2. VOL OFFSET, 10. RESET1ST_KSB, 25. SUS FREQ

Items for factory use: 6. PANEL-2 ADJ (+) (1. R-HIGH, 2. G-HIGH, 6. B-LOW, 7. ABL), 7. PANEL FUNCTION (+) (1. R-LEVEL)

For AM noise prevention (Depending on the mode, brightness of the screen changes.)
For confirmation of the result of the setting change, the unit must be turned off then back on again.

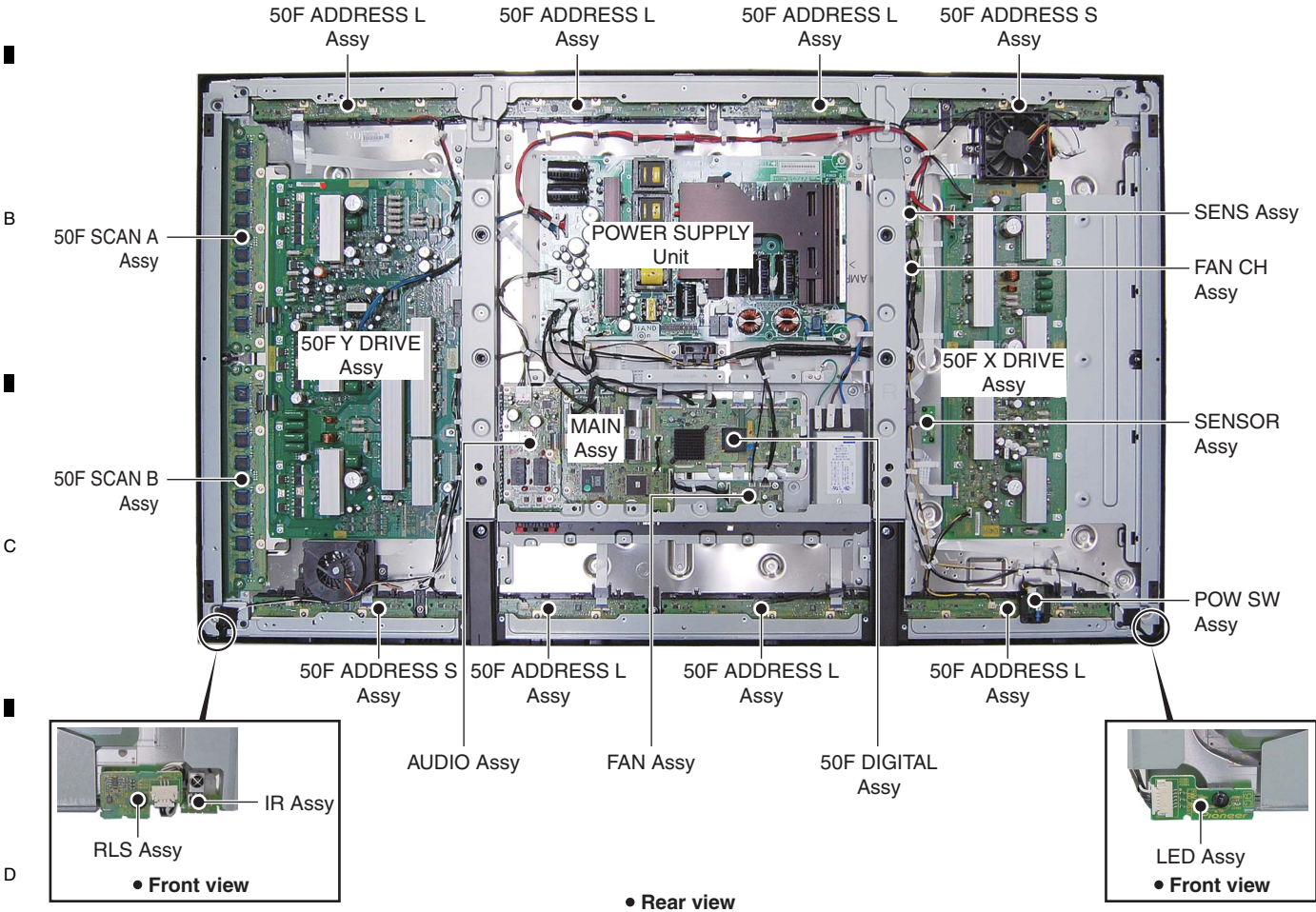
For the WB adjustment of the panel and ABL adjustment.
A setting table is available for each signal frequency.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

8. ETC (+)	
1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
2. DIGITAL EEPROM	Change the adjustment status of the DIGITAL Assy.
3. PD INFO.	
4. SD INFO.	
5. HR-MTR INFO.	For clearance of data for the corresponding items.
6. PM/B1-B5	The clearing method is the same: Select "CLEAR", then hold [ENTER/SET] pressed for at least 5 seconds.
7. P COUNT INFO.	
8. MAX TEMP.	
9. MIRROR	Switch the Mirror display mode.
10. CLS	Switch the function when checking the color sensor level.
9. RASTER MASK SETUP (+)	
1. MASK OFF	For use while the Raster Mask is displayed.
2. RST MASK 01	Use [↑] or [↓] to select the type of mask.
.....	Use [→] or [←] to select the sequence.
10. PATTERN MASK SETUP (+)	
1. MASK OFF	For use while the Pattern Mask is displayed.
2. PTN MASK 01	Use [↑] or [↓] to select the type of mask.
.....	Use [→] or [←] to select the sequence.
11. COMBI MASK SETUP (+)	
1. MASK OFF	For use while the Combination Mask is displayed.
2. CMB MASK 01	Use [↑] or [↓] to select the type of mask.
.....	Use [→] or [←] to select the sequence.

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.



NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES							
(PDP Panel)				(MTB)			
NSP		50F ADDRESS L ASSY	AWW1348			MAIN ASSY	AWW1393
NSP		50F ADDRESS S ASSY	AWW1349			FAN ASSY	AWW1394
						POW SW ASSY	AWW1395
NSP		50F SCAN A ASSY	AWW1350			SENS ASSY	AWW1396
		└ IC2801 - IC2808	AN16184A			FAN CH ASSY	AWW1397
NSP		50F SCAN B ASSY	AWW1351			AUDIO ASSY	AWW1398
		└ IC2901 - IC2908	AN16184A			LED ASSY	AWW1399
		SENSOR ASSY	AWW1340			IR ASSY	AWW1400
		50F DIGITAL Assy	AWW1368			RLS ASSY	AWW1401
		50F X DRIVE ASSY	AWV2599				
		50F Y DRIVE ASSY	AWV2600				
				(Power Supply)			
				⚠		POWER SUPPLY UNIT	AXY1203
				(Service Assy)			
						PDP SERVICE ASSY	AWU1378

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KRP-500P

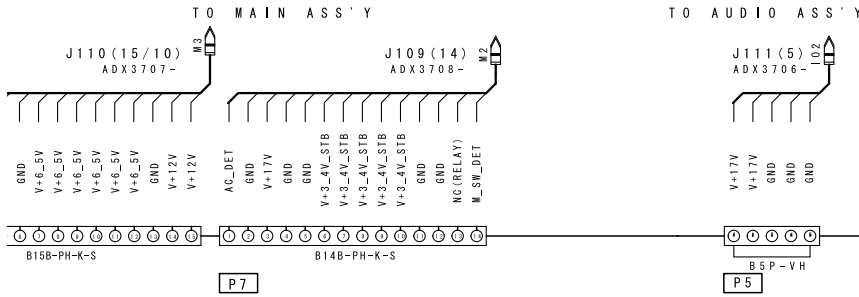
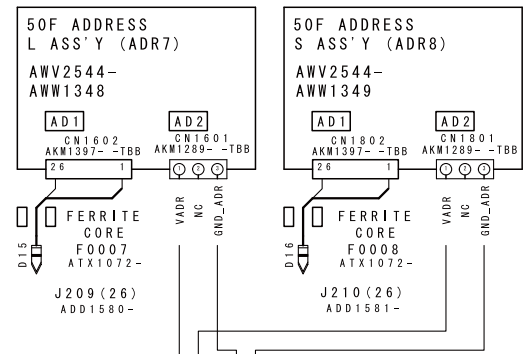
△

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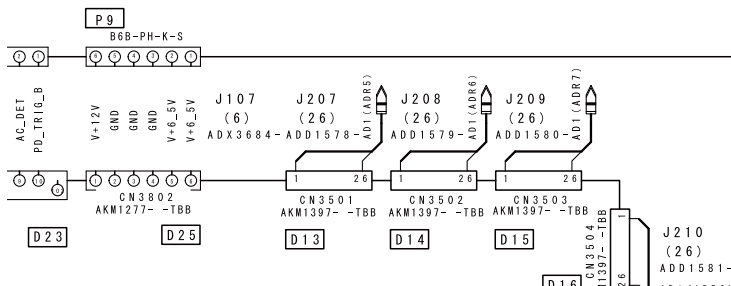


⚠ POWER CORD (※1, ※2, ※3, ※4)

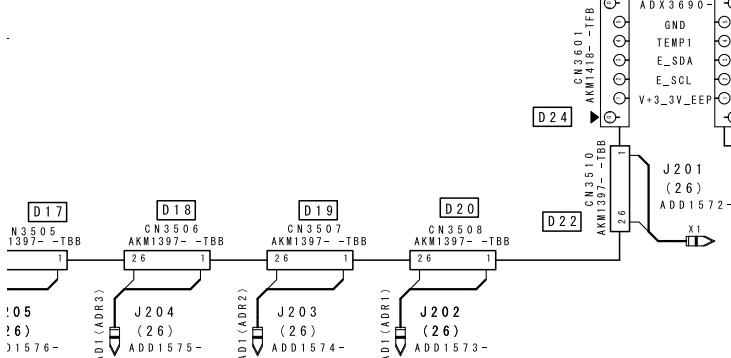
※1	KRP-500P/WYS5	POWER CORD	ADG1223-(FOR UK)
※2	KRP-500P/WYS1XK5		ADG1214-(OTHER)
※3	KRP-500P/WA5	POWER CORD	ADG1209-
※4	KRP-500P/LFT	POWER CORD	ADG1239-(FOR TAIWAN) -(OTHER)



⚠ POWER SUPPLY UNIT
AXY1203-



TAL



- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

2 M8

33. R8_EVN	35-16. G2_EVN
32. R7_EVN	36-15. G1_EVN
31. R6_EVN	37-14. G0_EVN
30. R5_EVN	38-13. G0_EVN
29. R4_EVN	39-12. B9_EVN
28. R3_EVN	40-11. B8_EVN
27. R2_EVN	41-10. B7_EVN
26. R1_EVN	42-9. B6_EVN
25. R0_EVN	43-8. B5_EVN
24. GND	44-7. B4_EVN
23. G8_EVN	45-6. B3_EVN
22. G6_EVN	46-5. B2_EVN
21. G7_EVN	47-4. B1_EVN
20. G6_EVN	48-3. B0_EVN
19. G4_EVN	49-2. GND
18. G4_EVN	50-1. MODE_A
17. G0_EVN	

CN3202 D12 → CN4001 M7

1-40. MODE_B	11-30. R3_ODD	21-20. G4_ODD	31-10. B5_ODD
2-39. S0_SEL	12-29. R2_ODD	22-19. B3_ODD	32-9. B4_ODD
3-38. GND	13-28. R1_ODD	23-18. G2_ODD	33-8. B3_ODD
4-37. GND	14-27. R0_ODD	24-17. G1_ODD	34-7. B2_ODD
5-36. R9_ODD	15-26. GND	25-16. G0_ODD	35-6. B1_ODD
6-35. R8_ODD	16-25. G8_ODD	26-15. GND	36-5. B0_ODD
7-34. R7_ODD	17-24. G8_ODD	27-14. B9_ODD	37-4. GND
8-33. R6_ODD	18-23. G7_ODD	28-13. B8_ODD	38-3. GND
9-32. R5_ODD	19-22. G6_ODD	29-12. B7_ODD	39-2. GND
10-31. R4_ODD	20-21. G5_ODD	30-11. B6_ODD	40-1. MODE_C

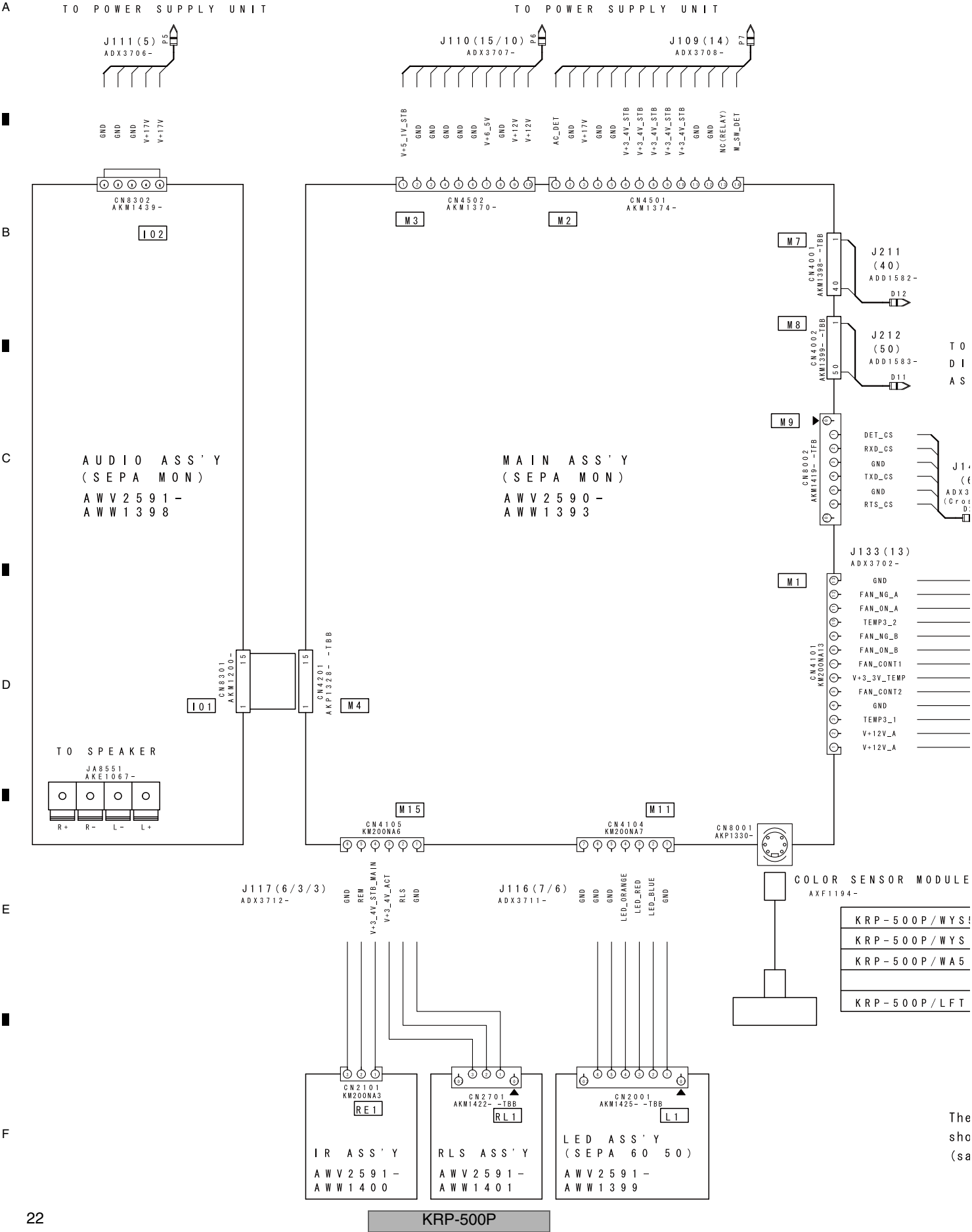
CN3510 D22 → CN1001 X1

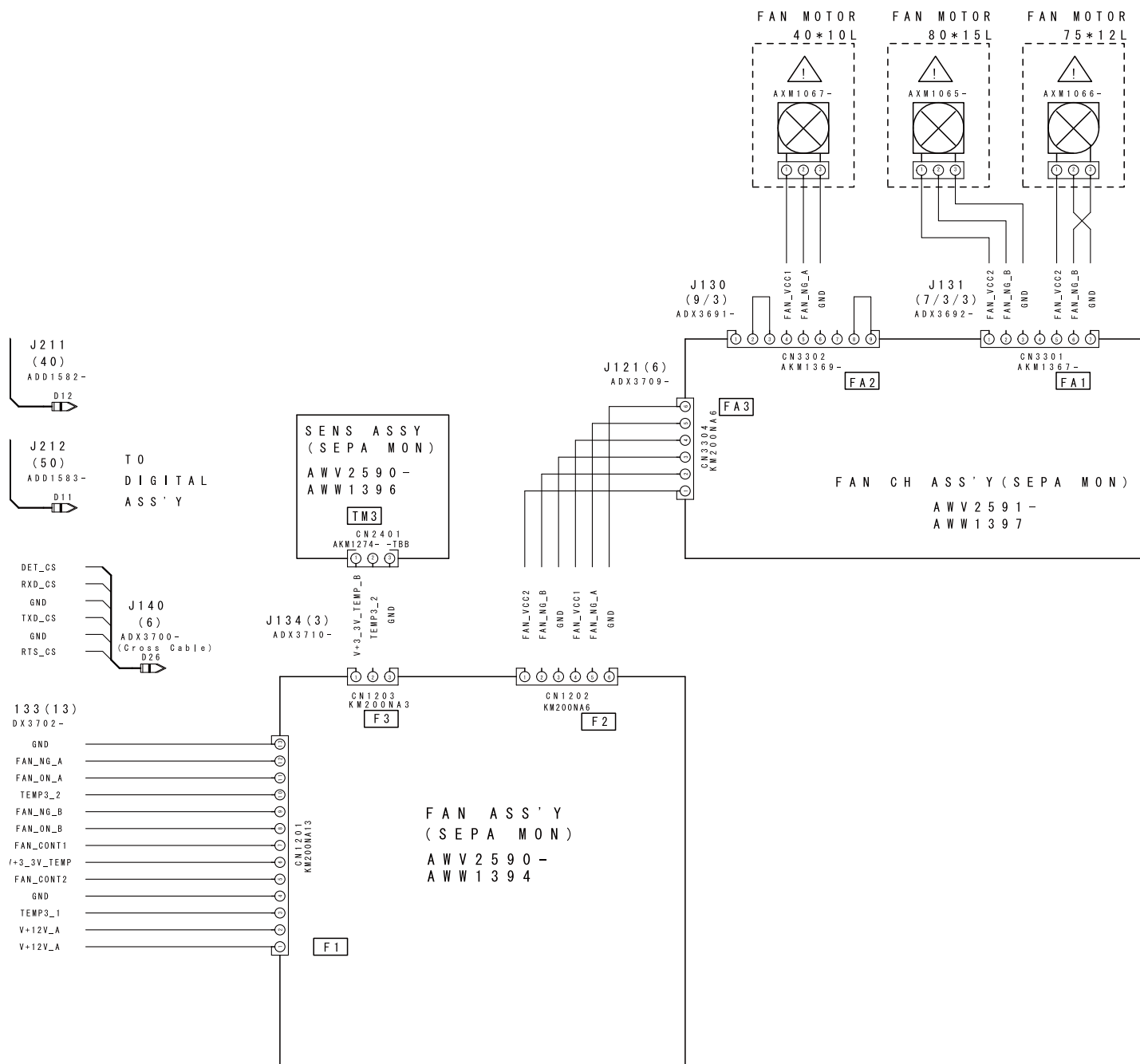
1-26. XSUS_B	14-13. GND
2-25. GND	15-12. XSOFD_D
3-24. XSUS_U	16-11. GND
4-23. GND	17-10. XSUS_MUTE
5-22. XSUS_D	18-9. GND
6-21. GND	19-8. XKOFSS1_ADJ
7-20. XSUS_G	20-7. XKOFSS2_ADJ
8-19. GND	21-6. GND
9-18. XPRST	22-5. ADD_PD
10-17. GND	23-4. PSW7
11-16. XKOFSS1	24-3. XRSV1
12-15. GND	25-2. Psize
13-14. XKOFSS2	26-1. XSUS_PD

OVERALL DIAGRAM
KRP-500P

KRP-500P

4.2 OVERALL WIRING DIAGRAM (2/2)






SENSOR MODULE

KRP-500P/WYS5	Attached
KRP-500P/WYSIXK5	
KRP-500P/WA5	Optional
KRP-500P/LFT	

CONNECTOR PIN ASSIGN

CN4201 M4 → CN8301 I01

1. V+6_5V	9. AC_A_MUTE
2. GND	10. A_NG_B
3. MCLK	11. DTW
4. GND	12. PDN
5. LRCK	13. SDA-AV
6. SCLK	14. SCL-AV
7. SDIN	15. GND
8. RST_5504	

The  mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

OVERALL DIAGRAM
KRP-500P

KRP-500P

4.3 OVERALL BLOCK DIAGRAM (1/2)

A

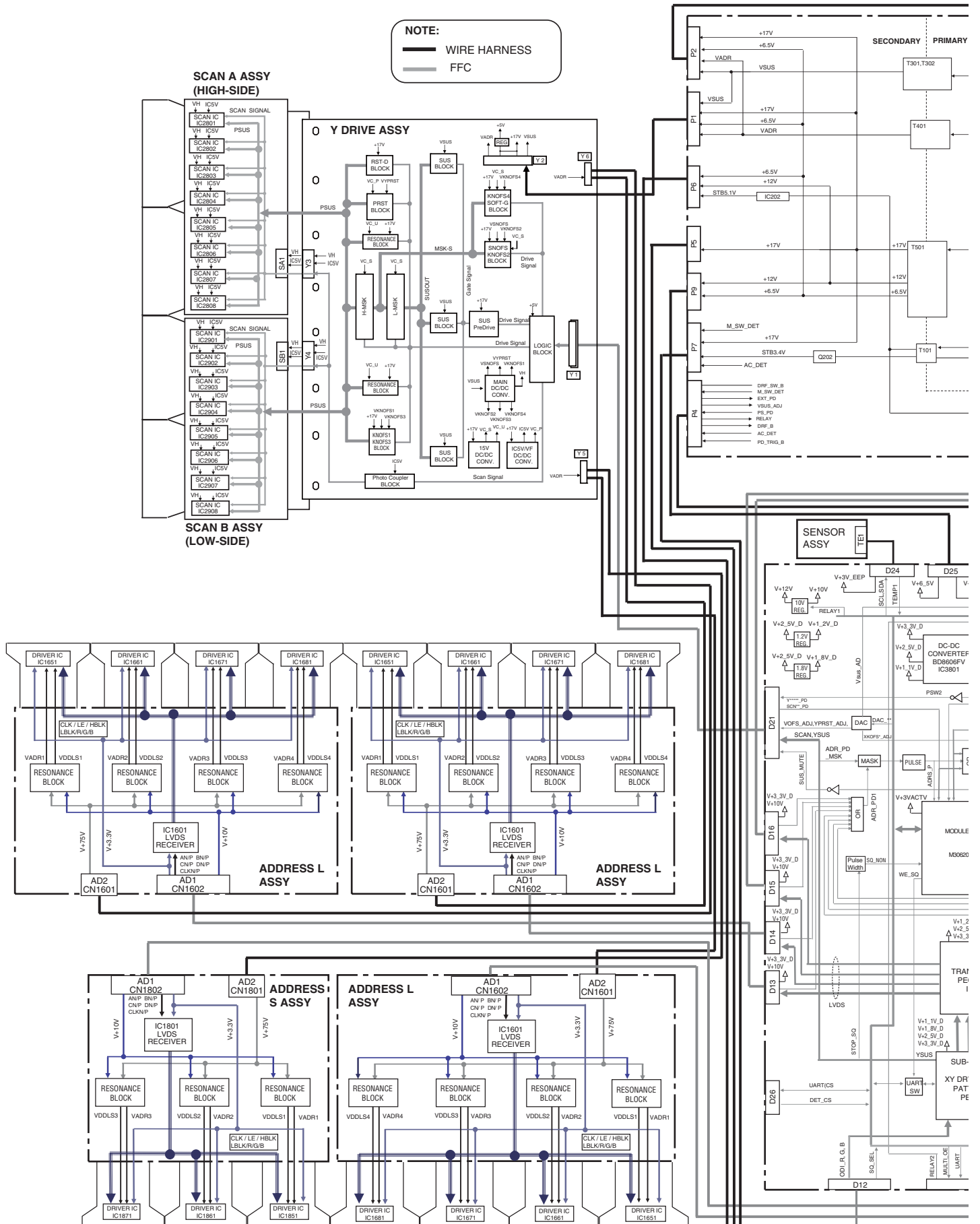
B

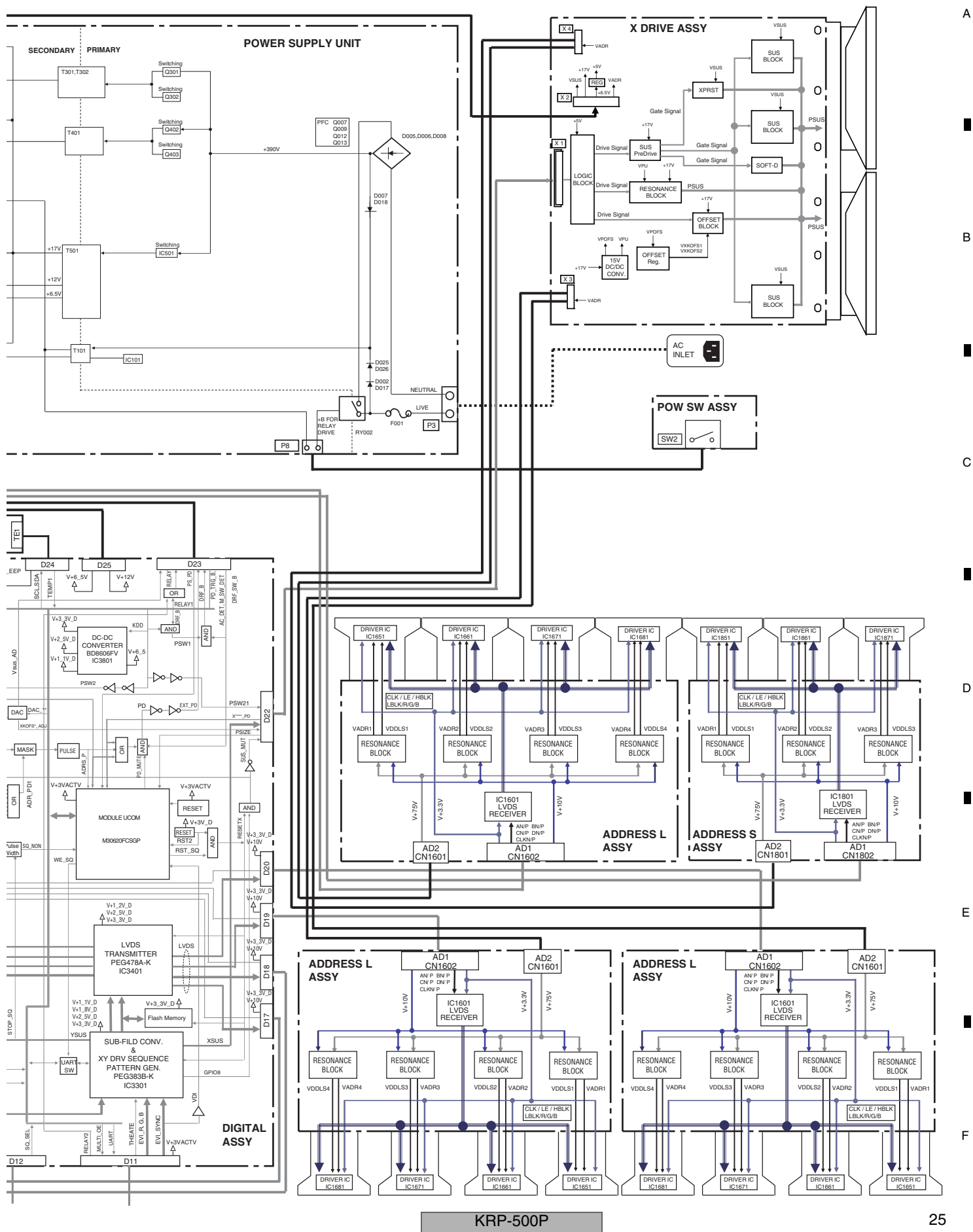
C

D

E

F





A

B

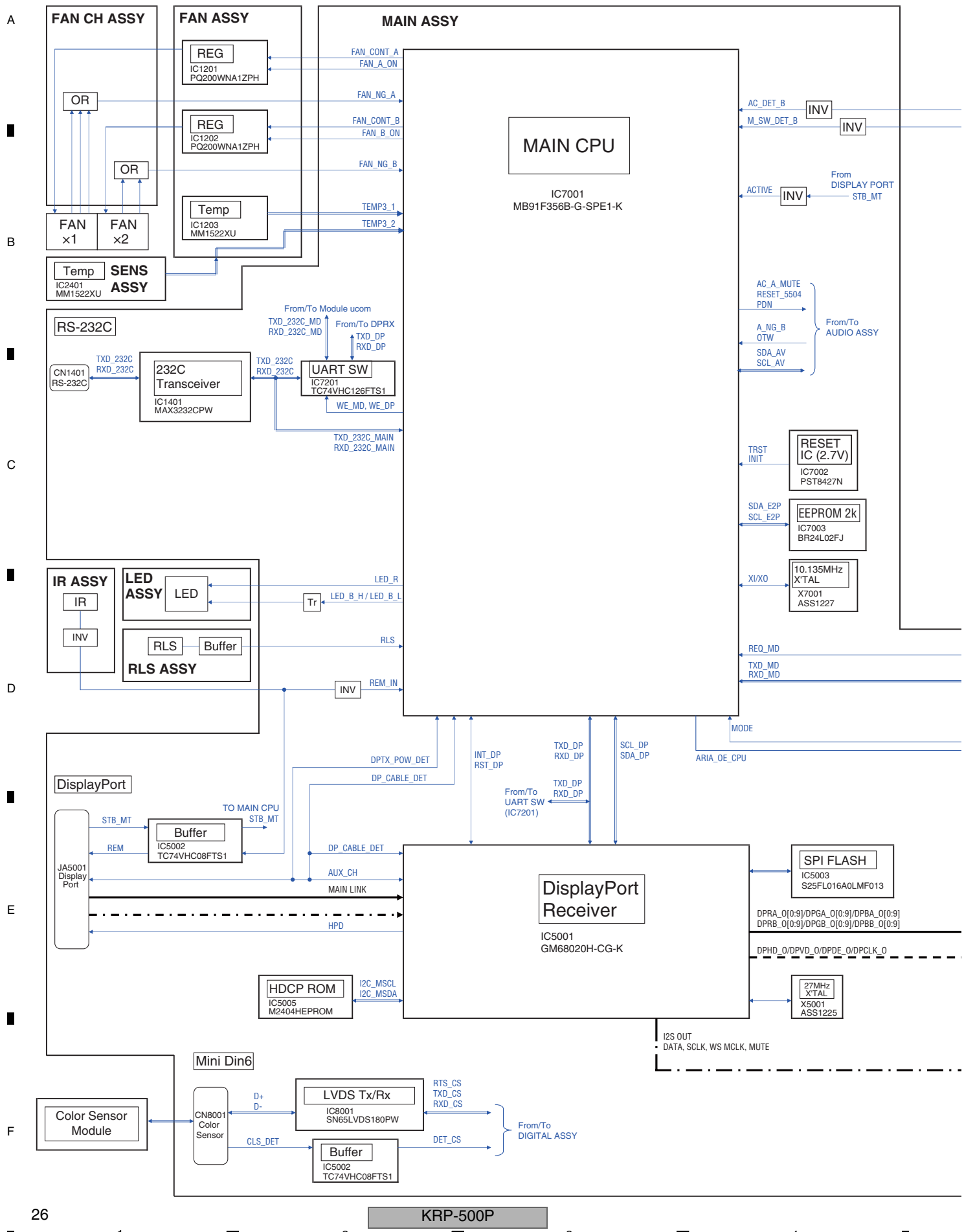
C

D

E

F

4.4 OVERALL BLOCK DIAGRAM (2/2)





1 2 3 4

4.5 POWER SUPPLY UNIT

A

B

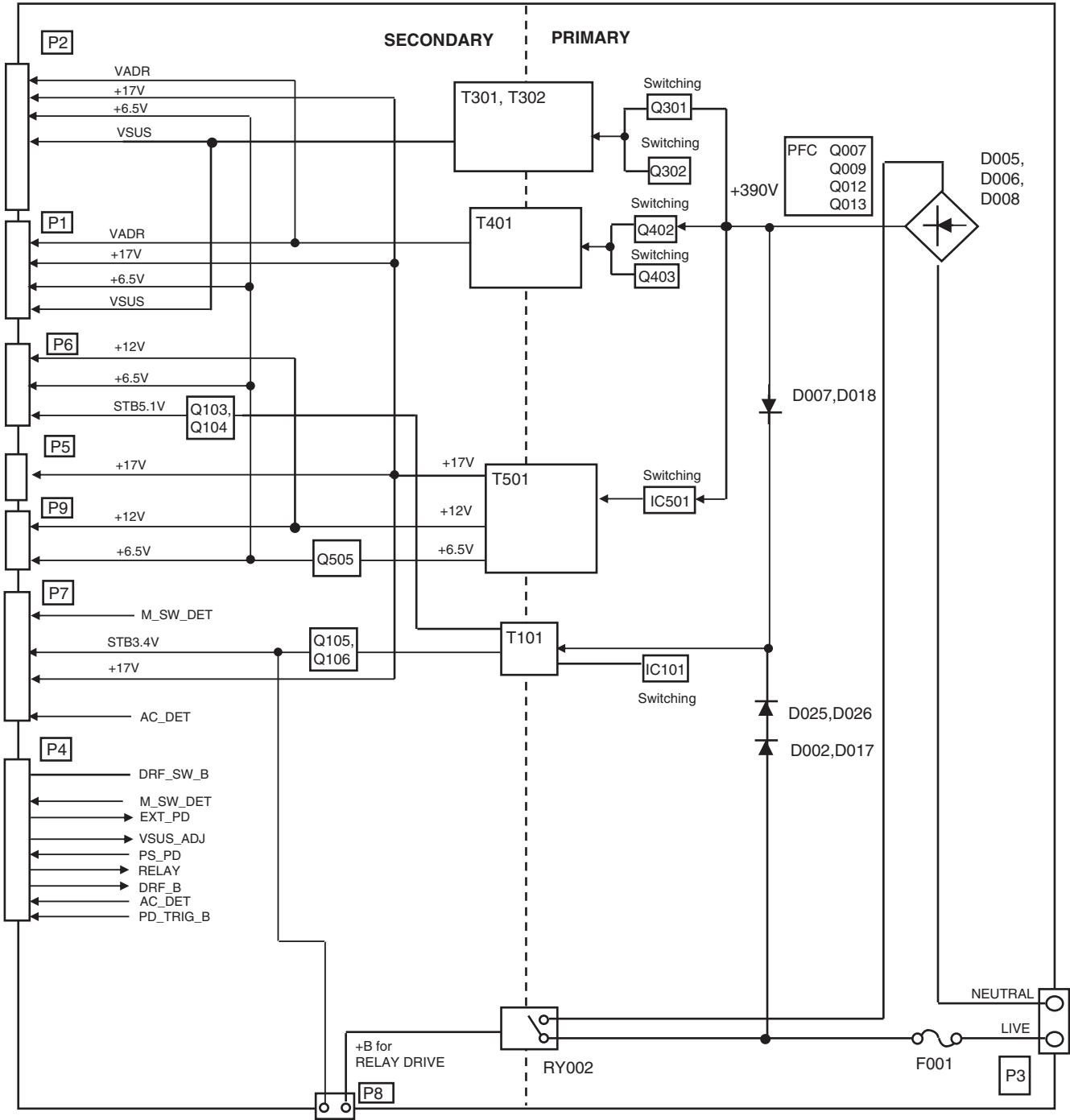
C

D

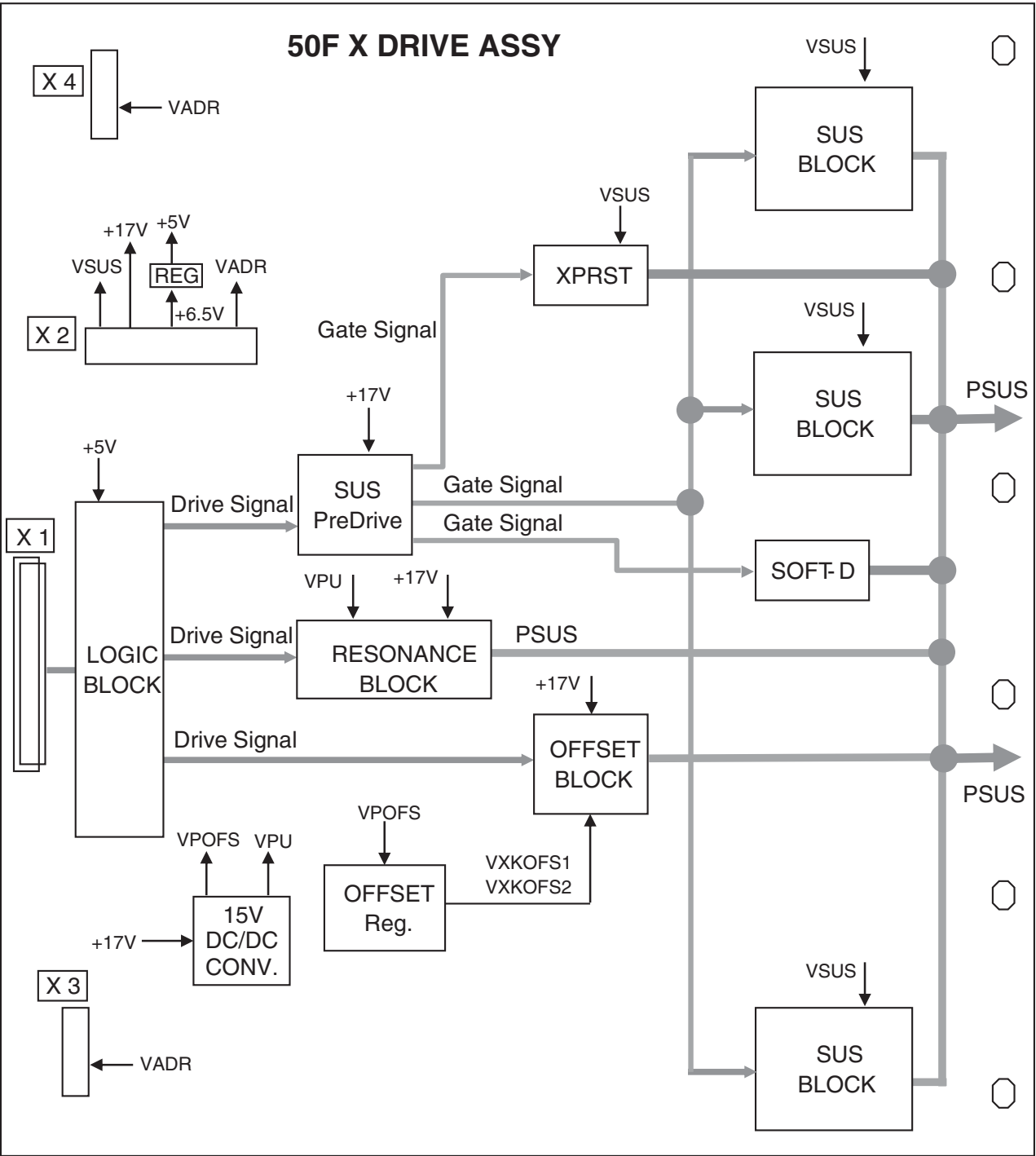
E

F

POWER SUPPLY UNIT

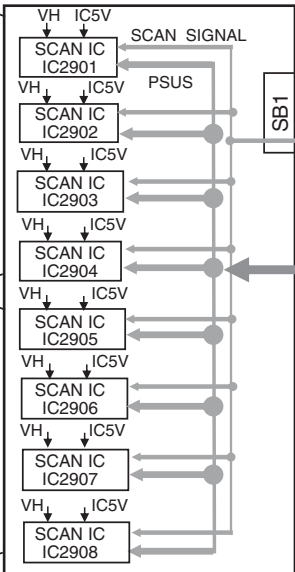


4.6 50F X DRIVE ASSY



4.7 50F Y DRIVE, 50F SCAN A and B ASSYS

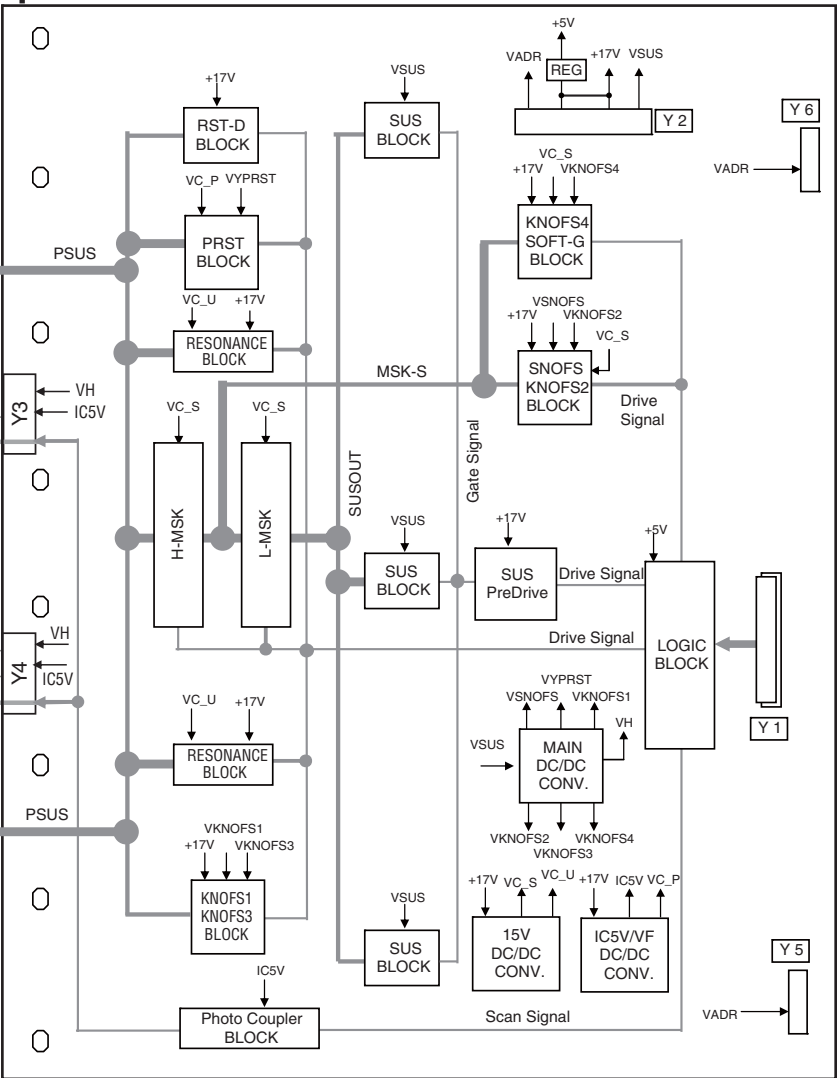
50F SCAN A ASSY
(HIGH-SIDE)



50F SCAN B ASSY
(LOW-SIDE)

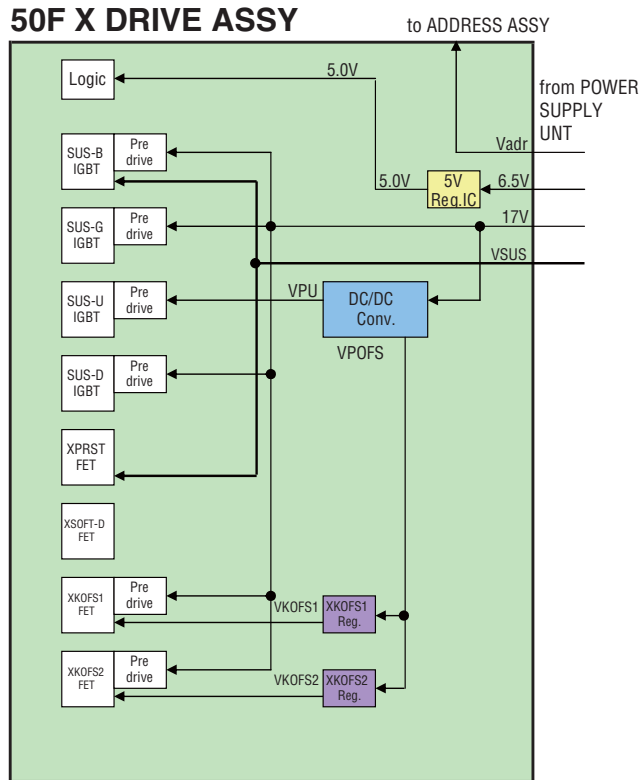
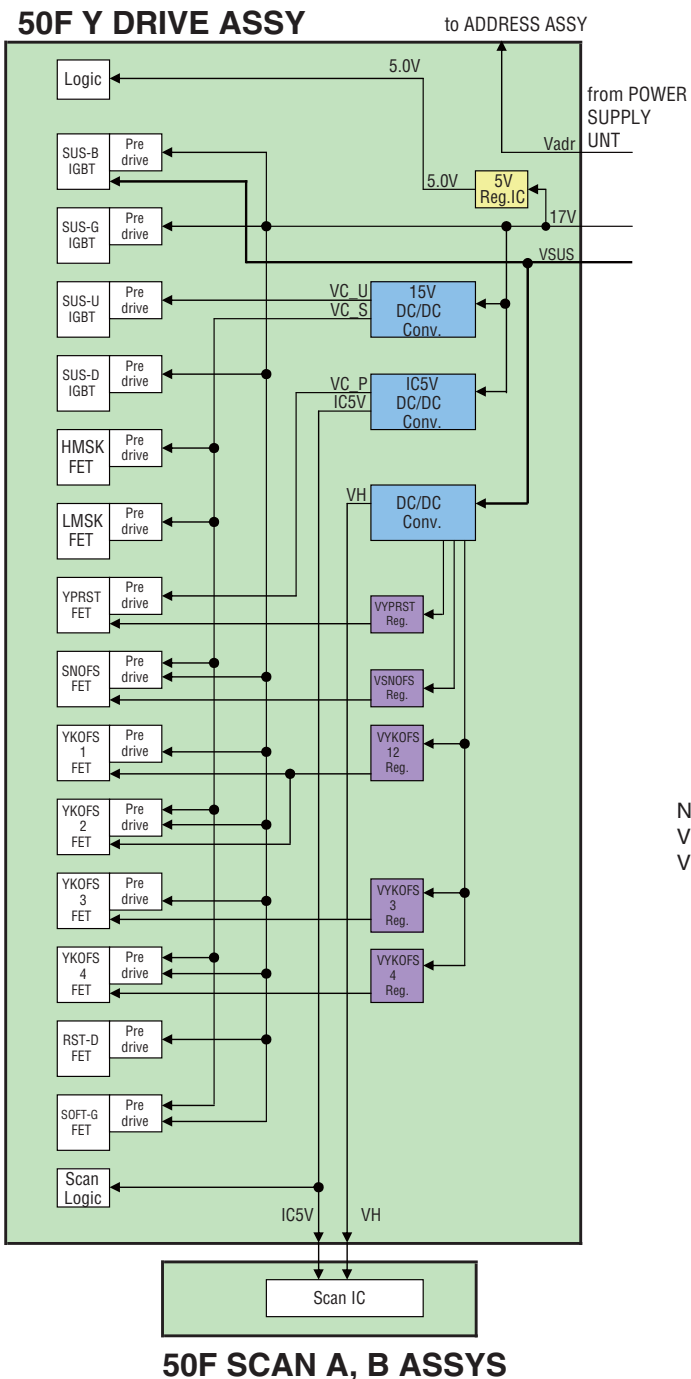


50F Y DRIVE ASSY



5 6 7 8

4.8 POWER SUPPLY BLOCK of 50F X, Y DRIVE and 50F SCAN A and B ASSYS



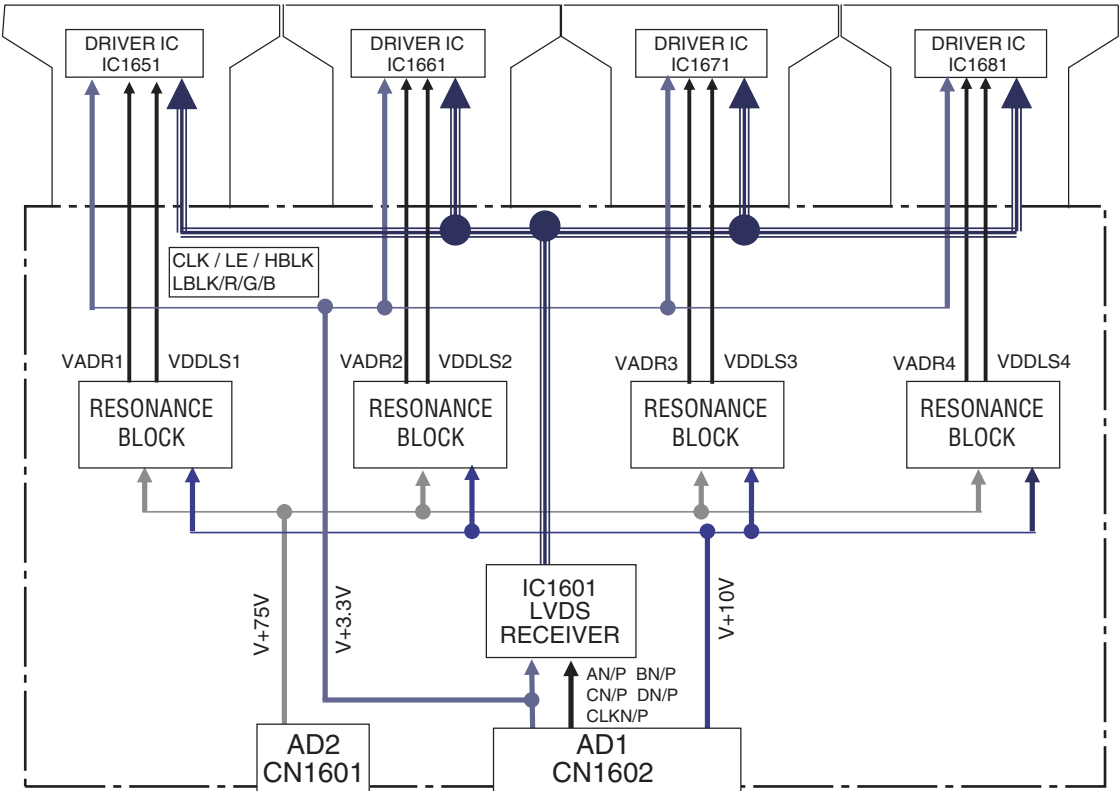
Note:
VYPRST, VSNOF5, VYKOF5 12, VYKOF5 3, VYKOF5 4
VXKOF5 1 and VXKOF5 2 voltages are electrical volume controls.

1 2 3 4

4.9 50F ADDRESS L and S ASSYS

A

50F ADDRESS L ASSY

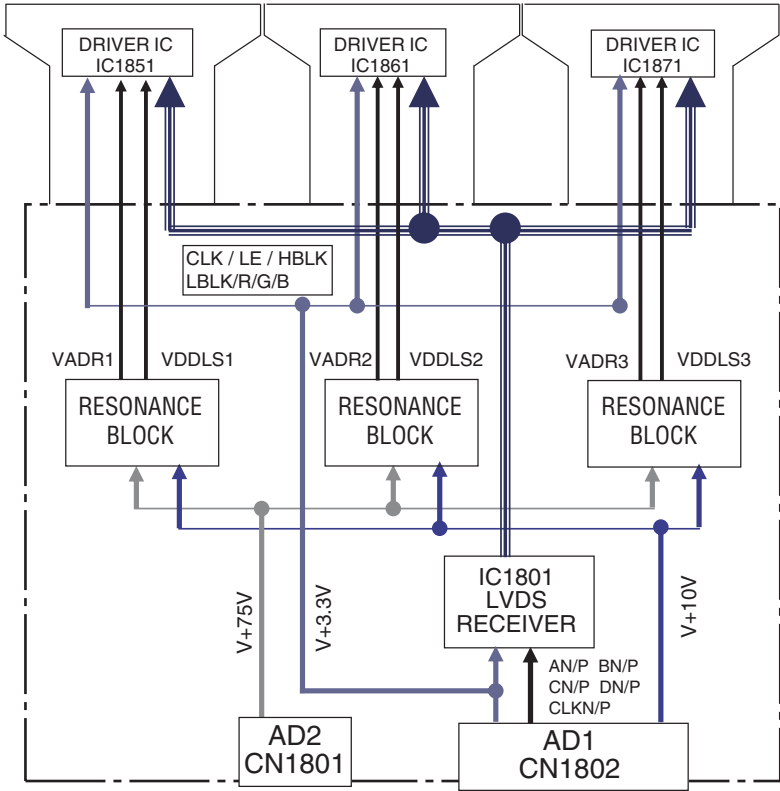


B

C

D

50F ADDRESS S ASSY

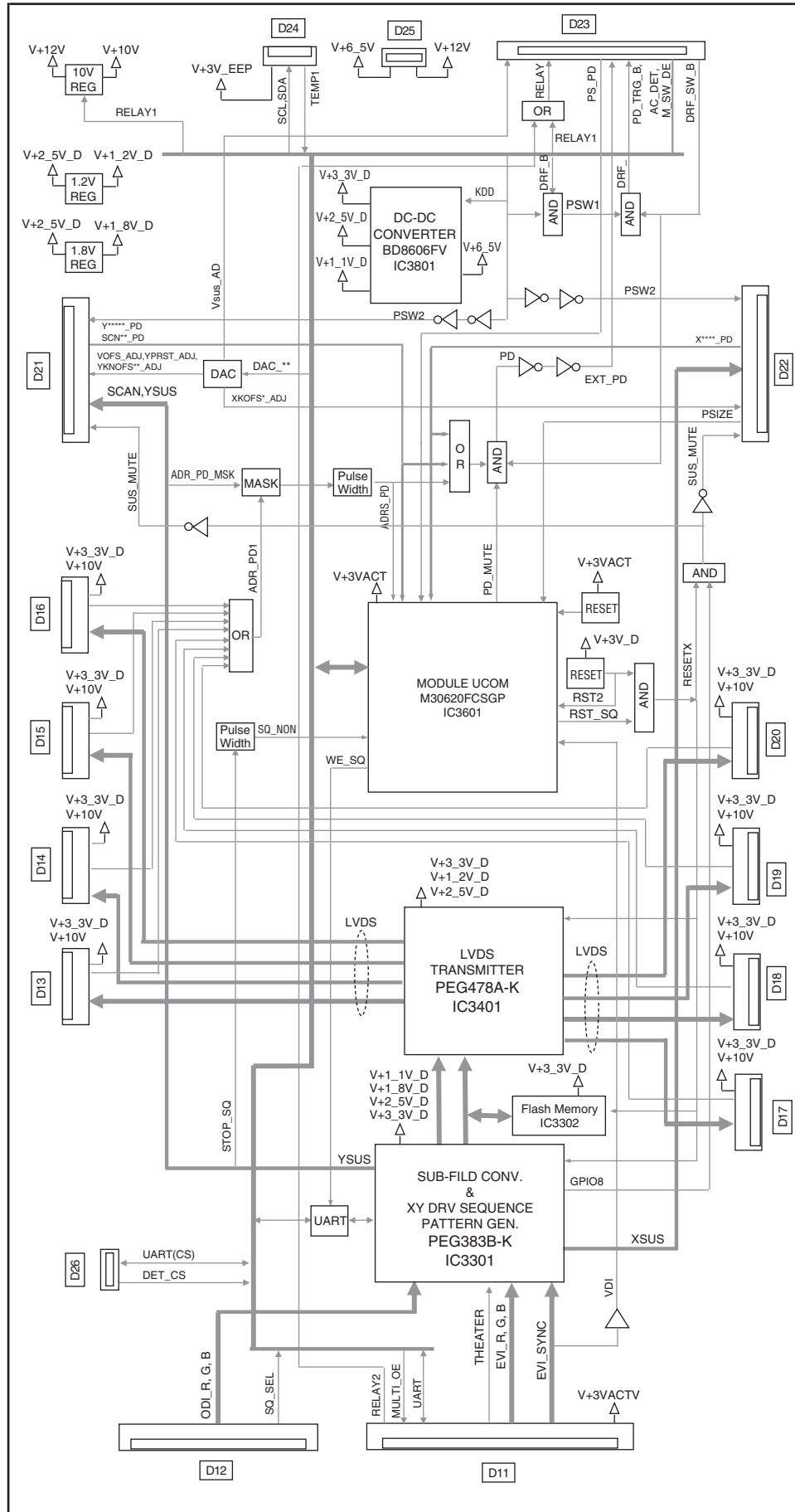


E

F

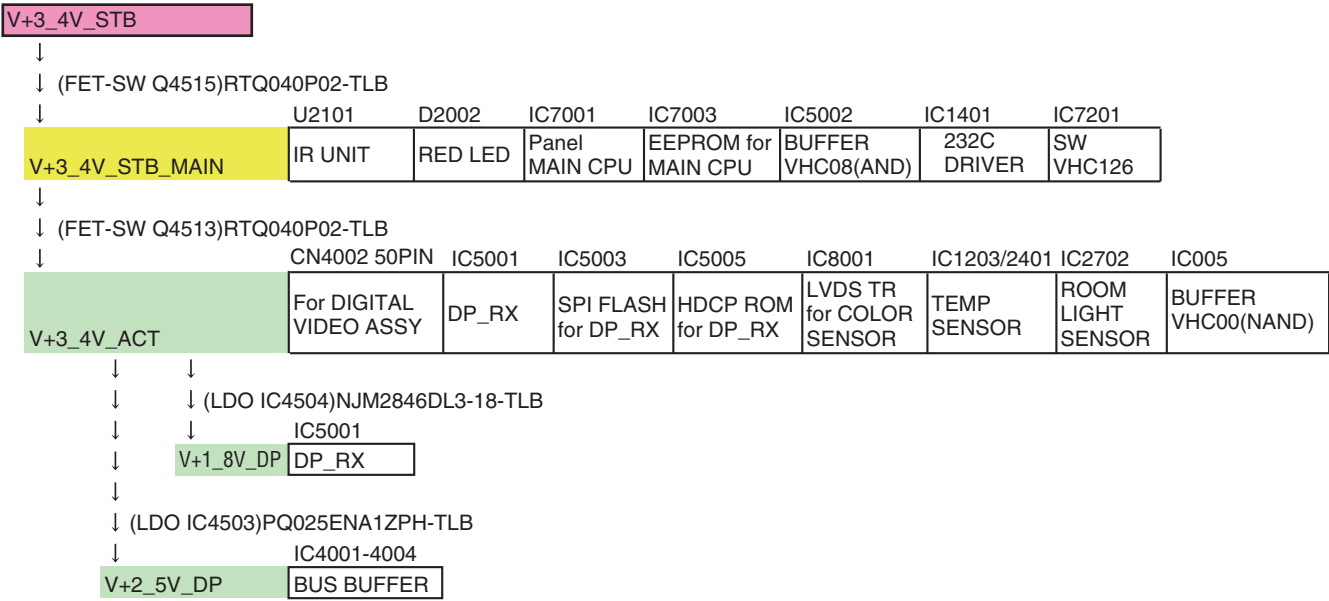
4.10 50F DIGITAL ASSY

50F DIGITAL ASSY

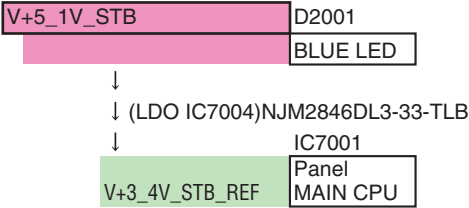


4.11 POWER SUPPLY BLOCK of MAIN and AUDIO ASSYS

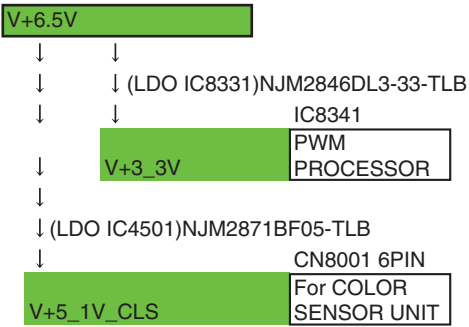
A



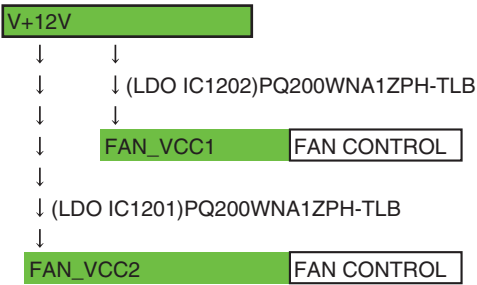
C



D



E



F



[1] LED DISPLAY INFORMATION

LED Pattern

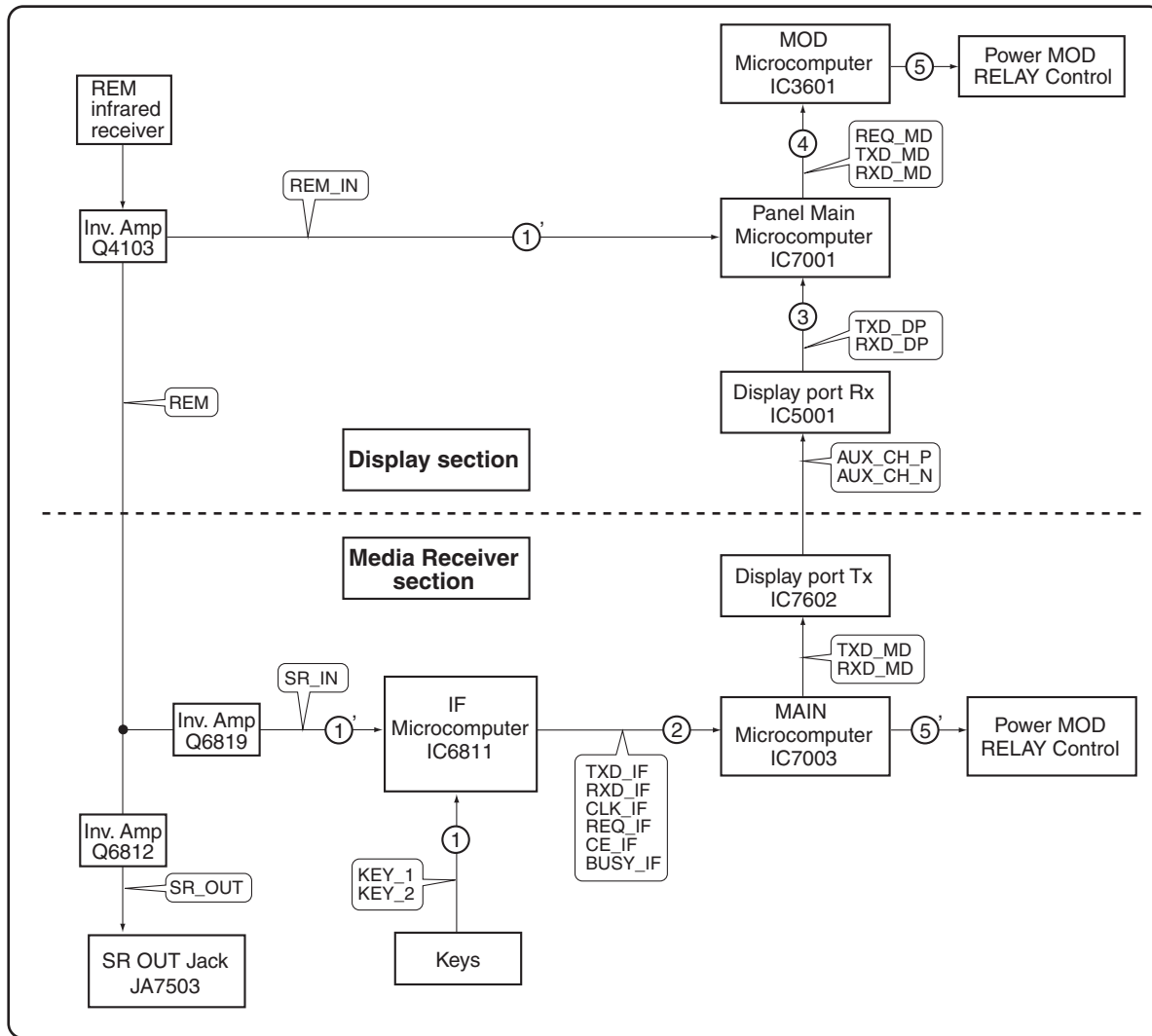
Status	LED Display Pattern		Remarks
AC-OFF /Main PowerOFF	Blue Red		
Standby	Blue Red		
Power ON	Blue Red		
Abnormality in system connection	Blue Red		
Power down	Blue Red		*1
Shutdown	Blue Red		*2
No digital adjustment data copied for backup	Blue Red		
During download (panel main)	Blue Red		
During download (excepting panel main)	Blue Red		*3

*1: This LED only flashes when power-down is generated in the display unit.
When power-down is generated in the MR, the LED on the MR flashes.

*2: This LED only flashes when shutdown is generated in the display unit.
When shutdown is generated in the MR, the LED on the MR flashes.

*3: These LEDs only flash during rewriting of software in the display unit.
During rewriting of software in the MR, the LEDs on the MR flash.

[2] POWER ON SEQUENCE



① : The KEY signal is input to the IF microcomputer.

①' : The remote control signal is input to the IF microcomputer and Panel main microcomputer.

② : The IF microcomputer sends the operation data of the remote control unit key to the main microcomputer.

③ : The main microcomputer issues a startup command (PON) to the panel main microcomputer through DP Tx and DP Rx.

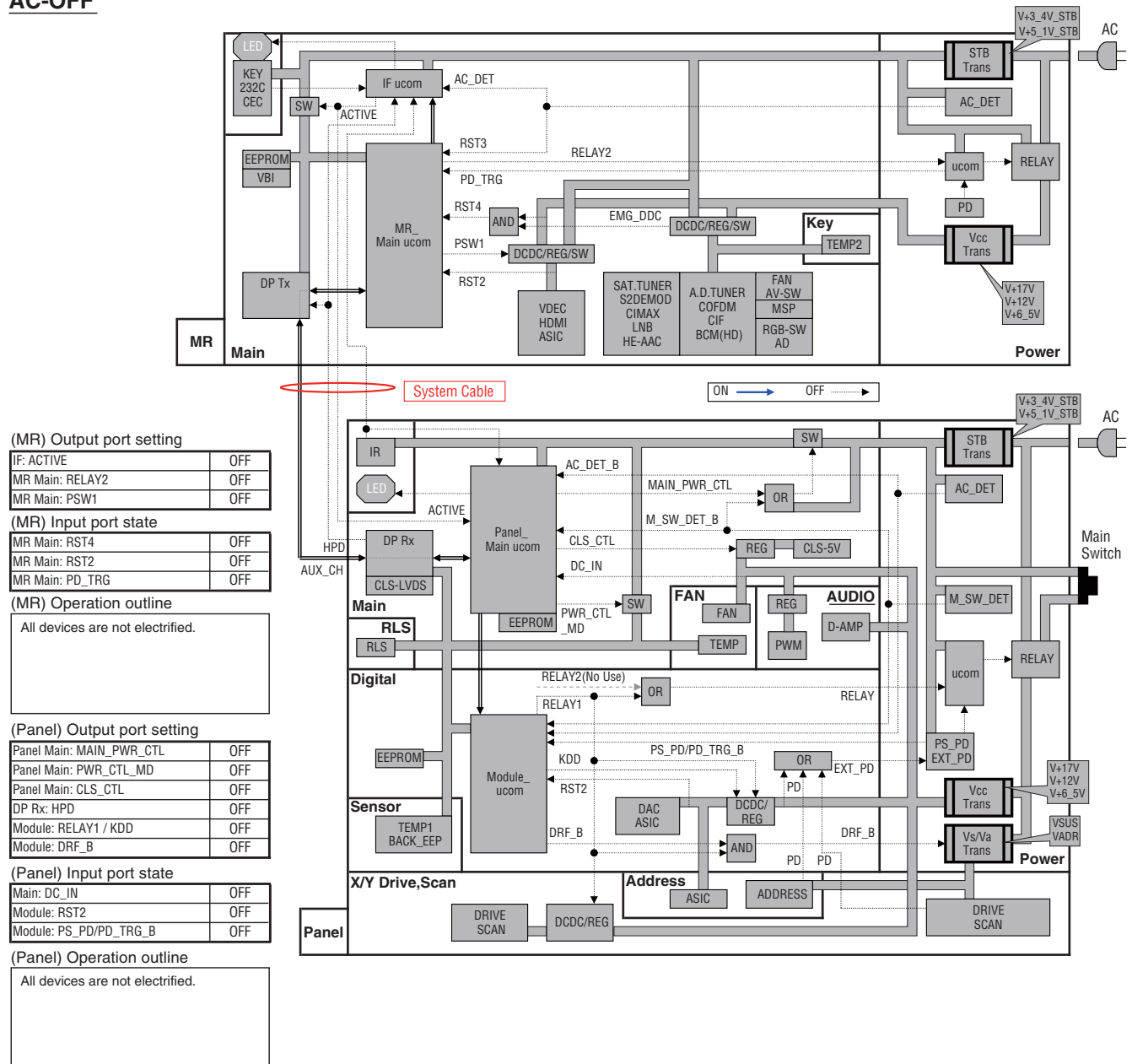
④ : The panel main microcomputer issues a startup command (PON) to the MOD microcomputer.

⑤ : The MOD microcomputer controls a MOD relay of the POWER SUPPLY Unit (Display section), then the power is turned on.

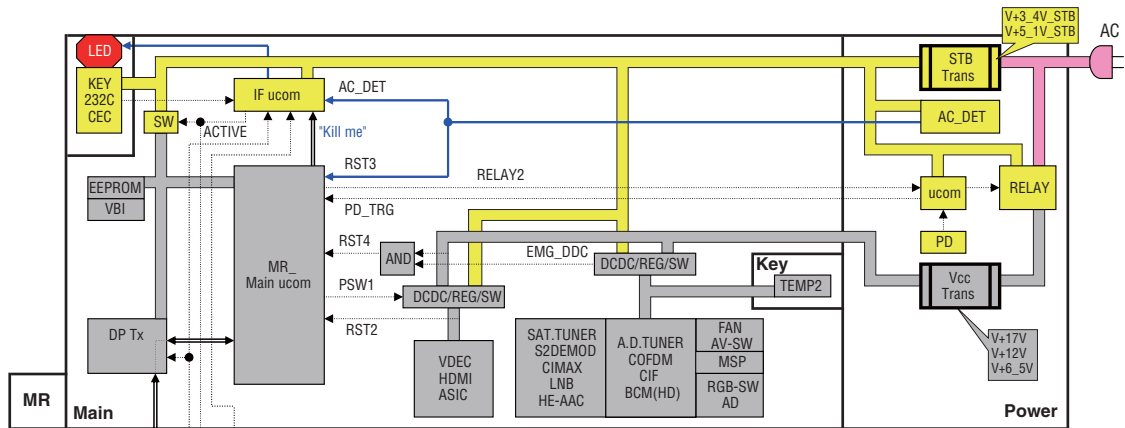
⑤' : The main microcomputer controls a MOD relay of the POWER SUPPLY Unit (Media Receiver section), then the power is turned on.

[3] DETAILS OF POWER ON SEQUENCE

AC-OFF



Panel Main Power OFF



(MR) Output port setting

IF: ACTIVE	OFF
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

The unit will enter either Passive Standby, Active Standby, or Functional Standby mode, according to the circumstance. (The figure shows Passive Standby mode as an example.)

(Panel) Output port setting

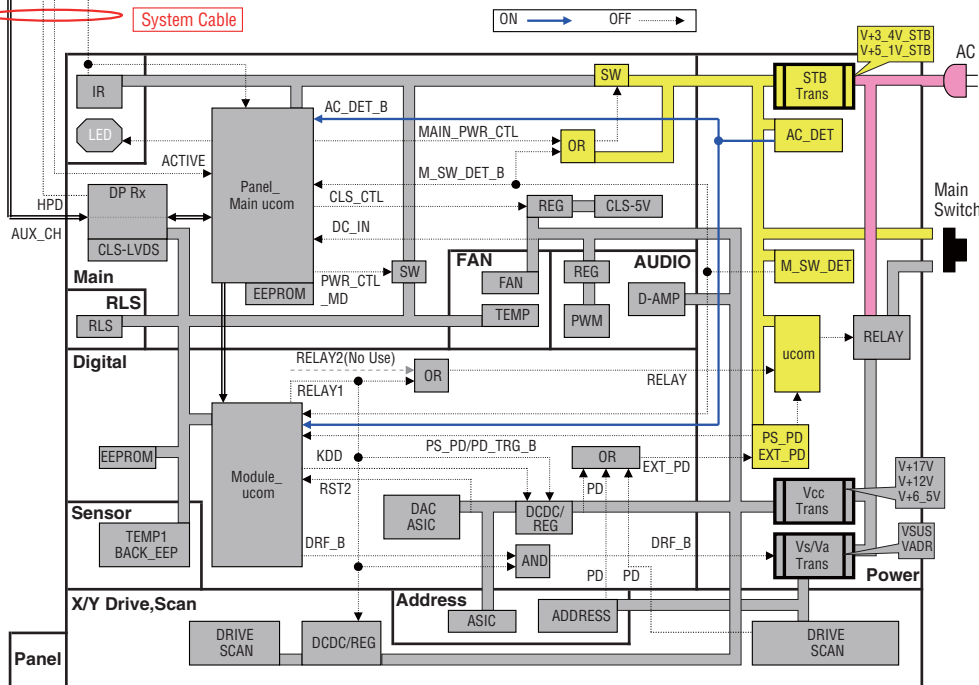
Panel Main: MAIN_PWR_CTL	OFF
Panel Main: PWR_CTL_MD	OFF
Panel Main: CLS_CTL	OFF
DP Rx: HPD	OFF
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

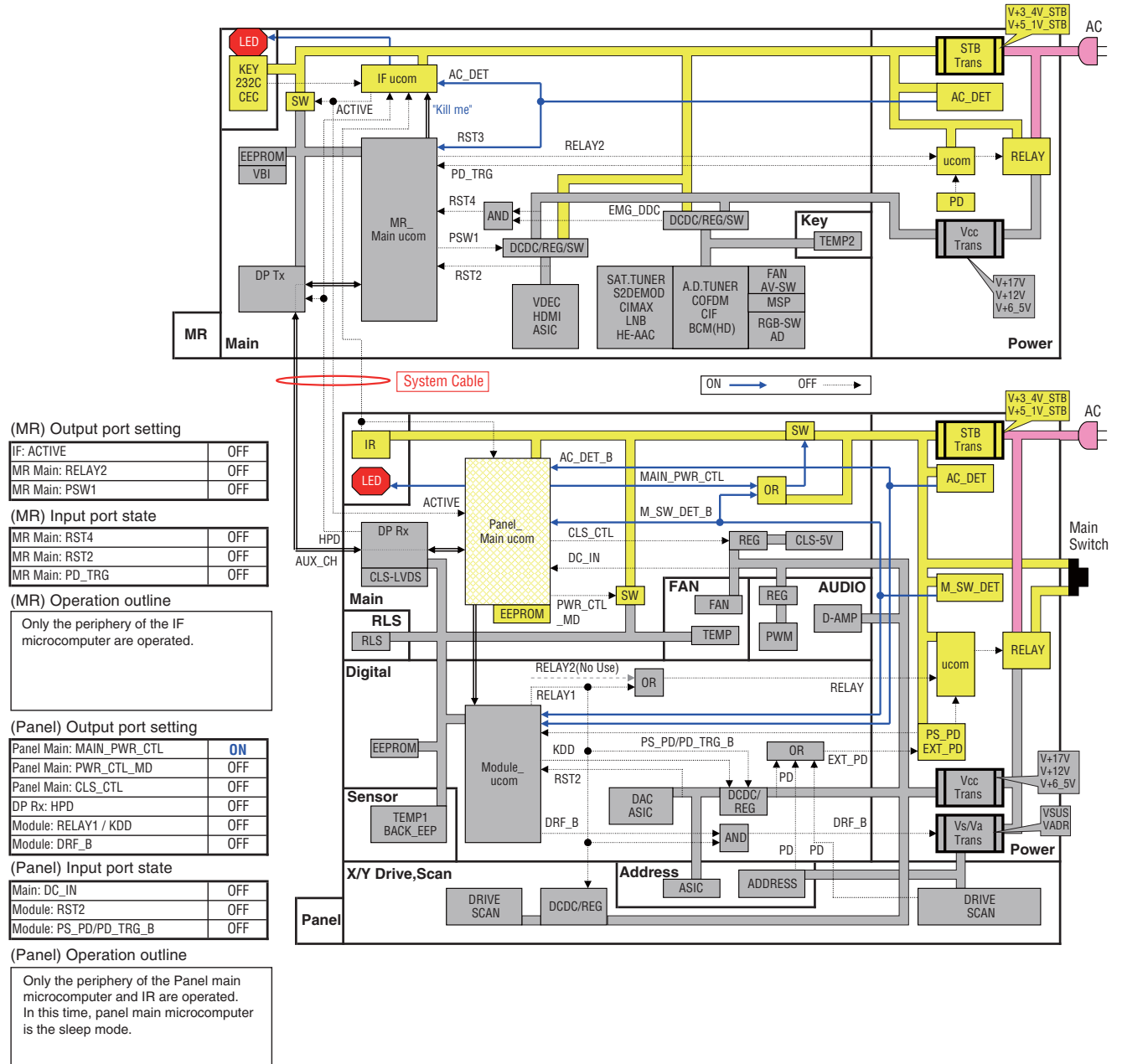
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

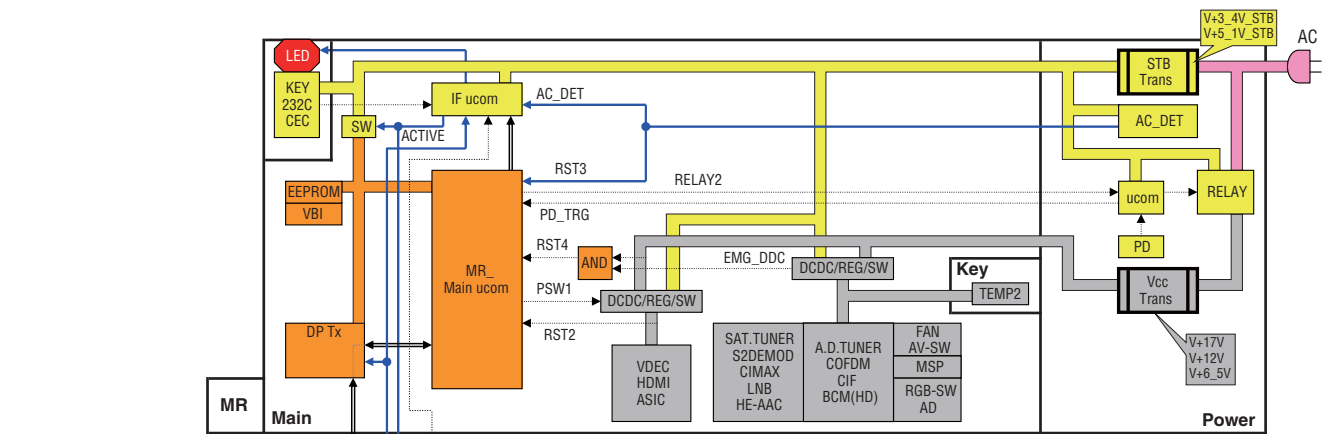
(Panel) Operation outline

Standby power is supplied from the Power Assy, but power to each device is interrupted.



Passive Standby





(MR) Output port setting

IF: ACTIVE	ON
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

Periphery of the IF and MR main microcomputers and DP Tx are operated.

(Panel) Output port setting

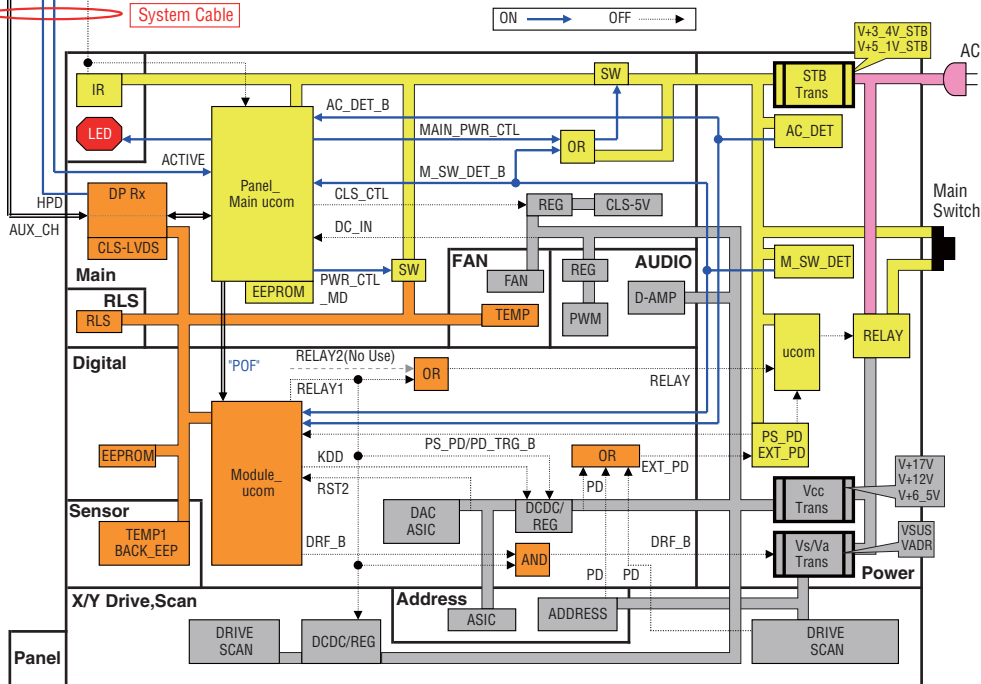
Panel Main: MAIN_PWR_CTL	ON
Panel Main: PWR_CTL_MD	ON
Panel Main: CLS_CTL	OFF
DP Rx: HPD	ON
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

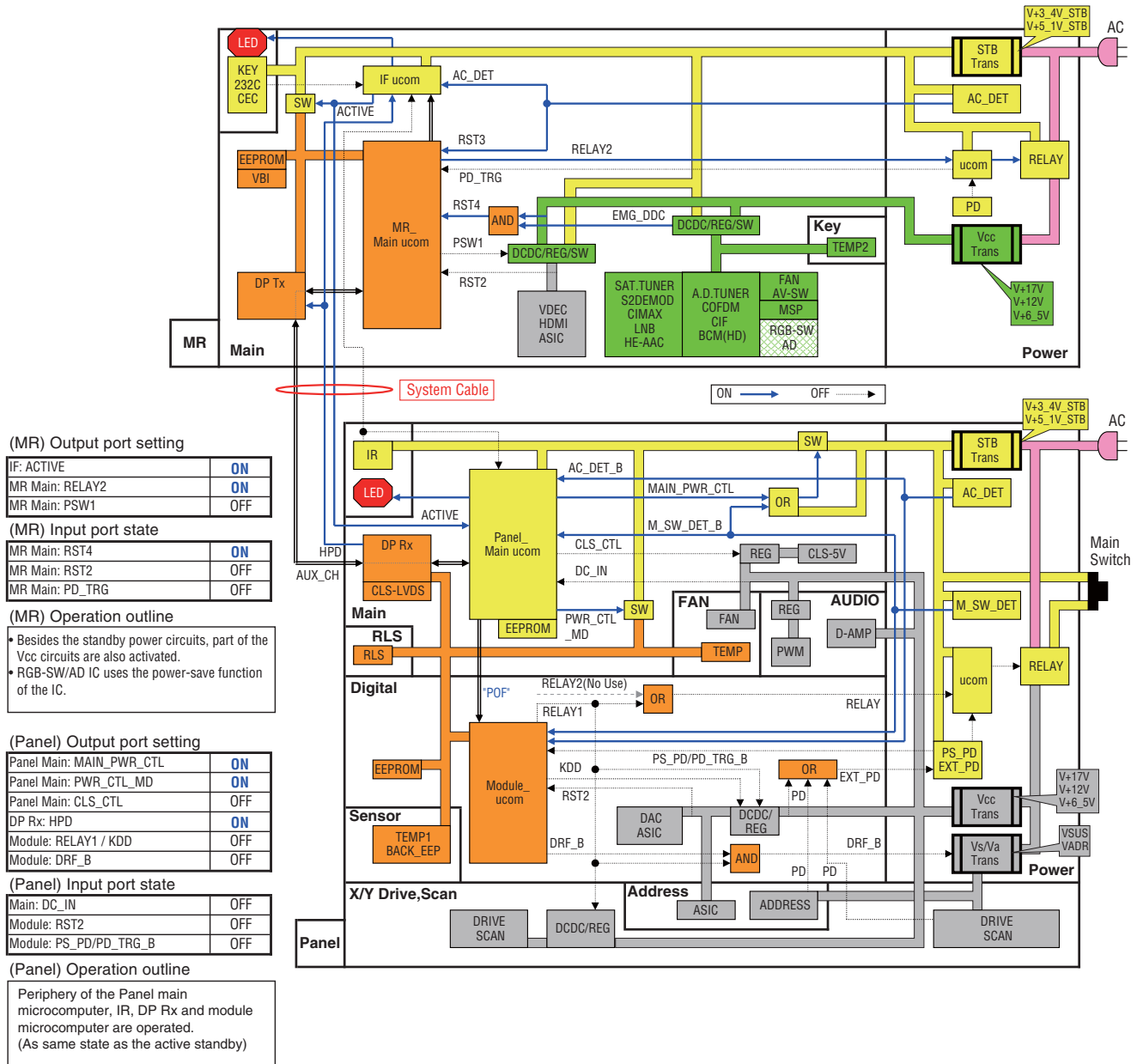
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

(Panel) Operation outline

Periphery of the Panel main microcomputer, IR, DP Rx and module microcomputer are operated.



Function Standby



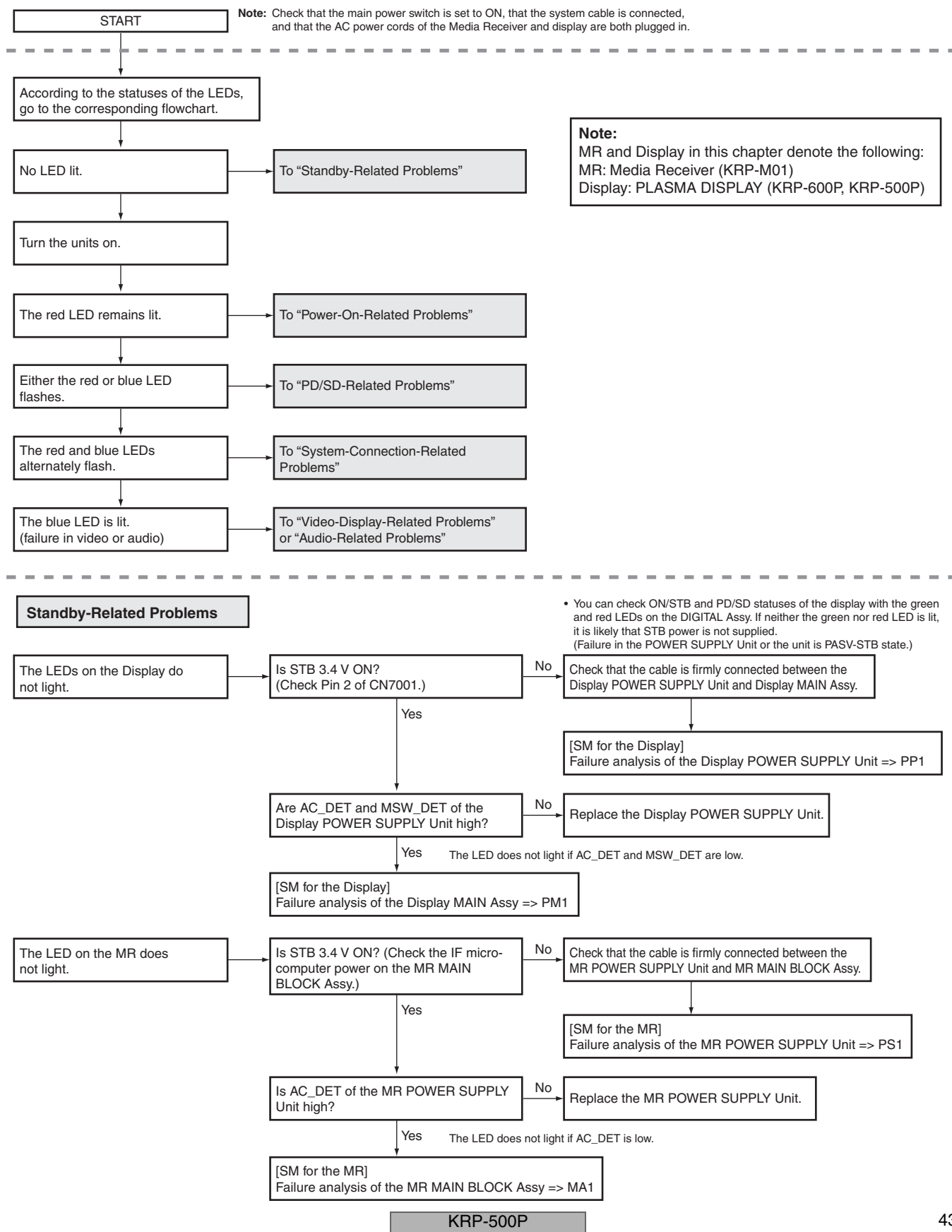
F

5 6 7 8

5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

[1] WHOLE UNIT

Flowchart of Failure Analysis for The Whole Unit



A

Power-On-Related Problems

When the MR is replaced, is the problem resolved?

Yes

Is the relay port of the connector (Pin 25 of CN4203) between the MR MAIN BLOCK Assy and MR POWER SUPPLY Unit high (3.4 V)?

No

[SM for the MR]
Failure analysis of the MR MAIN BLOCK Assy => MA2

No

Yes

[SM for the MR]
Failure analysis of the MR POWER SUPPLY Unit => PS2

B

Is the relay port of the connector (Pin 13 of CN4501) between the Display MAIN Assy and Display POWER SUPPLY Unit high (3.4 V)?

No

[SM for the Display]
Failure analysis of the Display MAIN Assy => PM2

Yes

[SM for the Display]
Failure analysis of the Display POWER SUPPLY Unit => PP2

C

PD/SD-Related Problems

The red LED on the Display flashes.

[SM for the Display]
See "5.3 DIAGNOSIS OF PD (POWER-DOWN)."

Power-down will not be activated if the drive is off.

The red LED on the MR flashes.

[SM for the MR]
See "5.3 DIAGNOSIS OF PD (POWER-DOWN)."

The blue LED on the Display flashes.

[SM for the Display]
See "5.4 DIAGNOSIS OF SD (SHUTDOWN)."

D

The blue LED on the MR flashes.

[SM for the MR]
See "5.4 DIAGNOSIS OF SD (SHUTDOWN)."

F

System-Connection-Related Problems

On the Display, the red and blue LEDs alternately flash.
On the MR, lit in red LED.

Note:

Only when the system is powered in response to the POWER key on the remote control unit and if it is in trouble do the LEDs flash in this way. If the units are turned on with their POWER keys or with the RS-232C command, even if the system is in failure, the red LEDs on the display and the MR light.

When the system cable is replaced, is the problem resolved?

Yes

Replace the system cable.

No

When the MR is replaced, is the problem resolved?

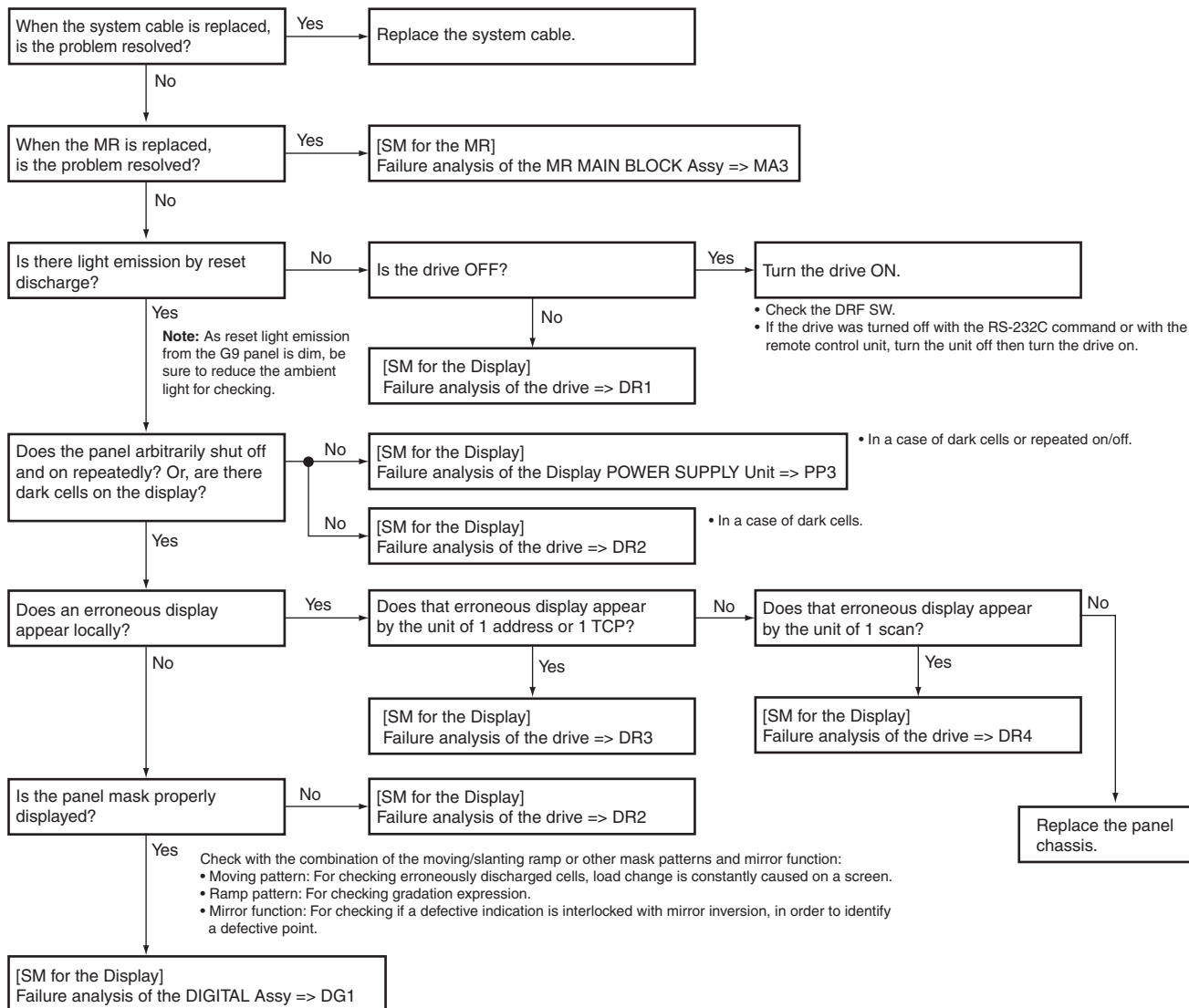
Yes

Failure in IC7602 or its peripheral circuits.
Replace the MR MAIN BLOCK Assy.

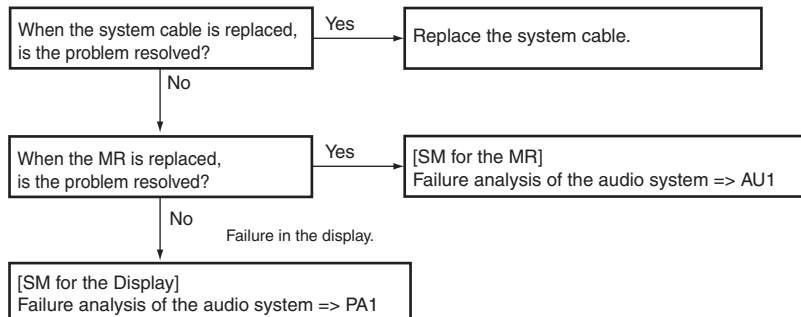
No

Failure in IC5001 or its peripheral circuits.
Replace the Display MAIN Assy.

Video-Display-Related Problems

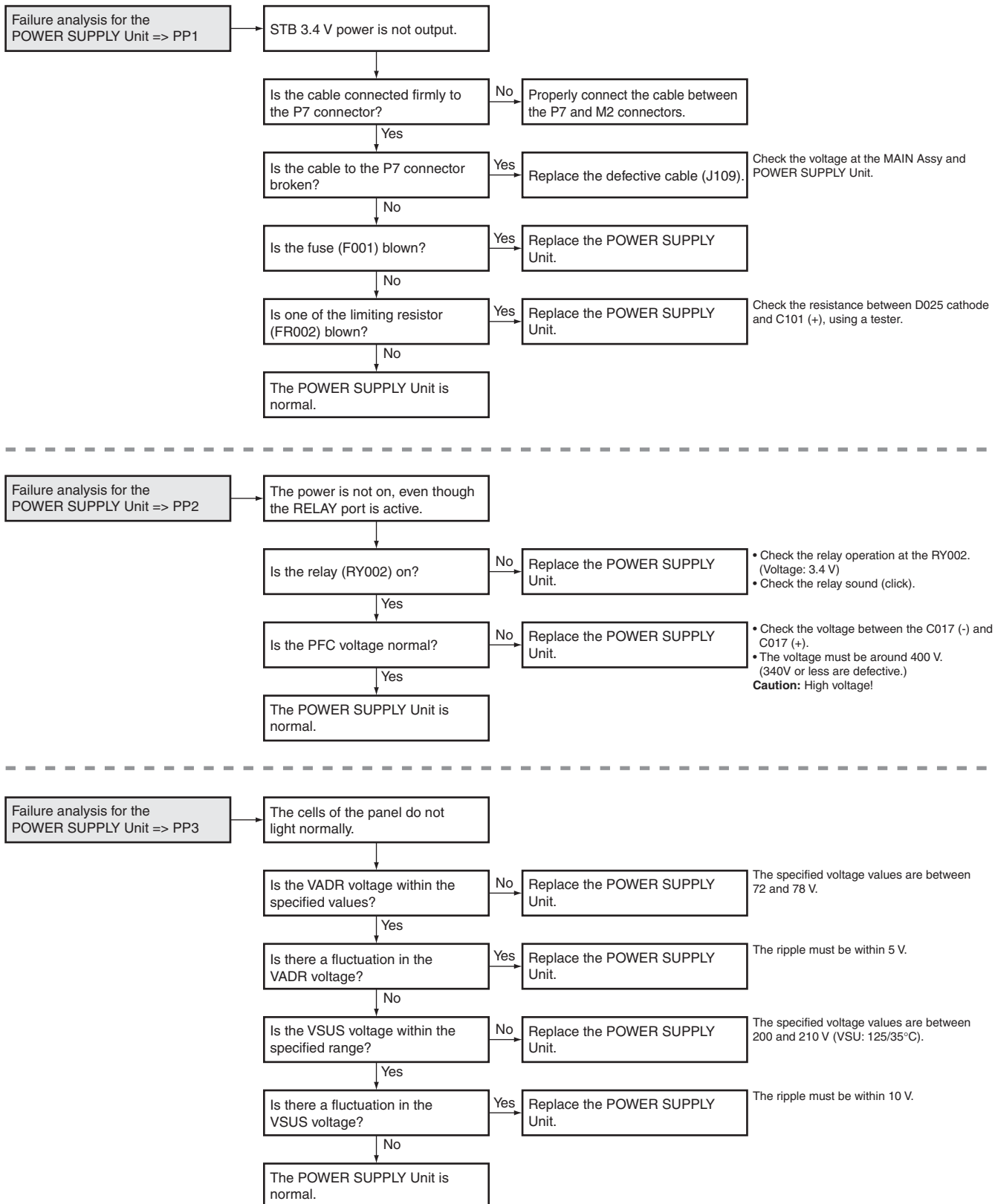


Audio-Related Problems



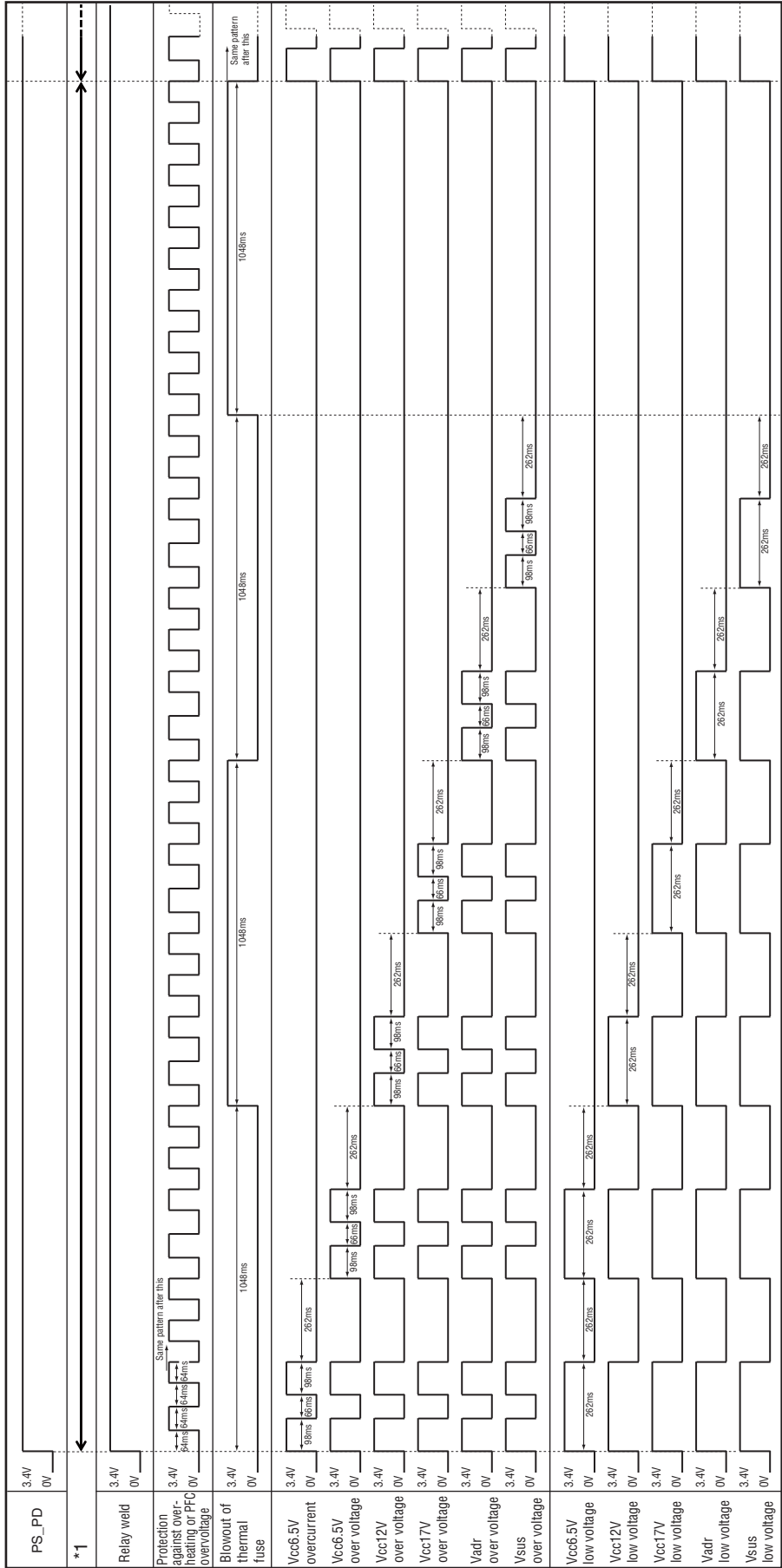
[2] POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit



■ Flashing Patterns Triggered by PS_PD

- Voltage waveforms at the GND terminal and Pin 3 (center pin, DGCLK) of CN201
- This flashing pattern continues while AC power is supplied in PS_PD.



*1 Repetition of the interval indicated by the arrows

A

[3] DRIVE ASSY

Flowchart of Failure Analysis for The Drive Assy

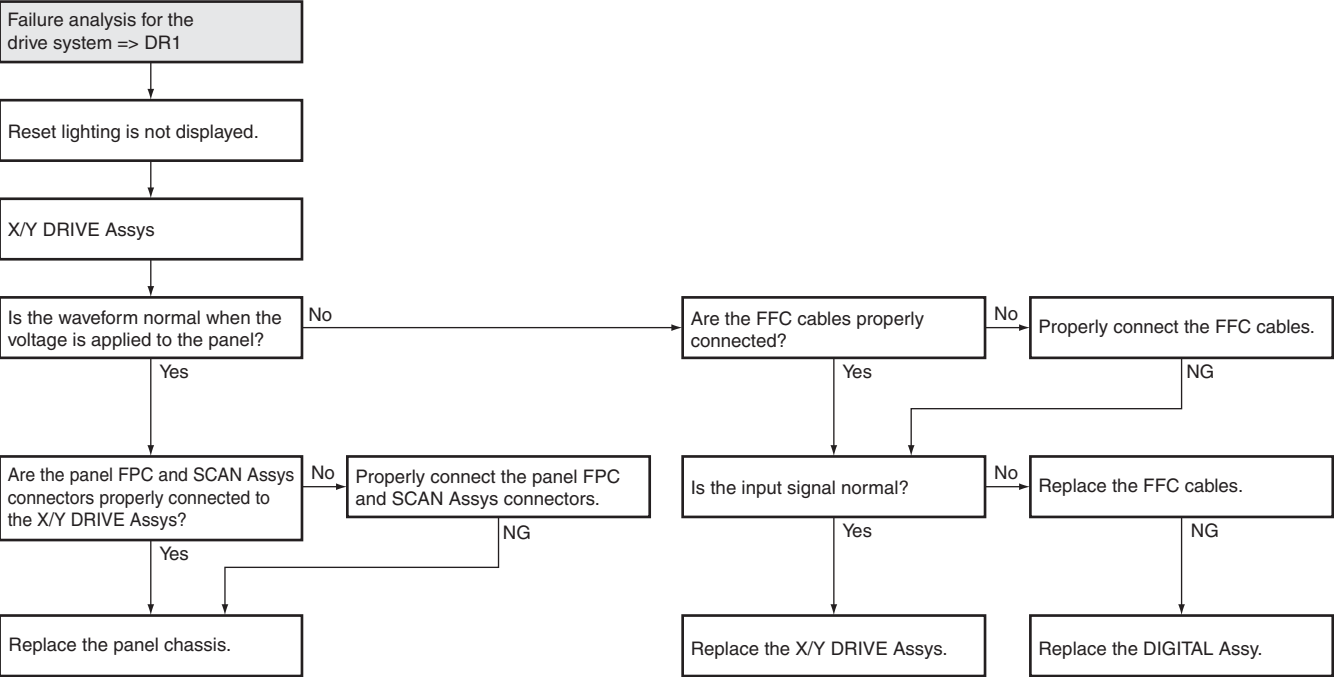
B

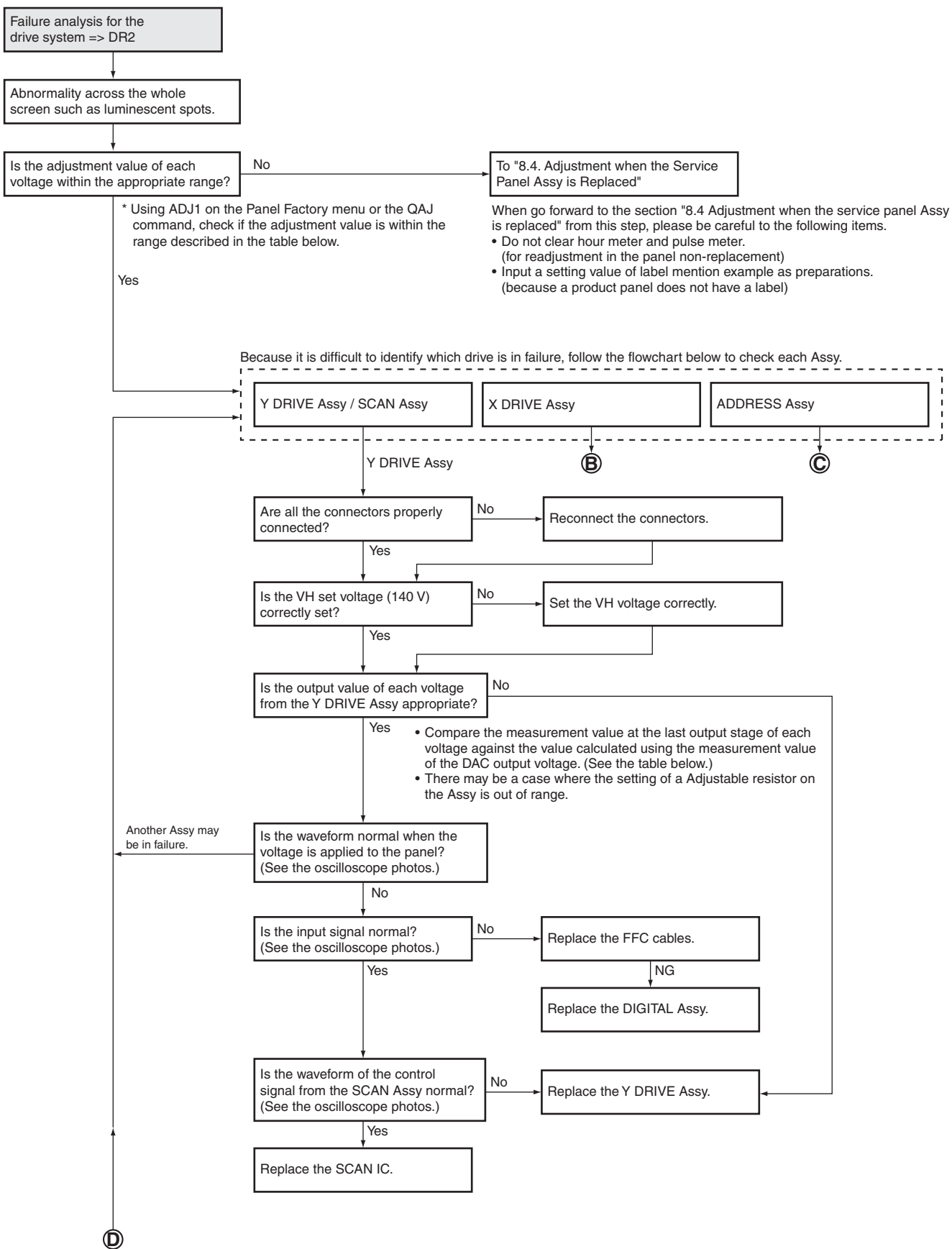
C

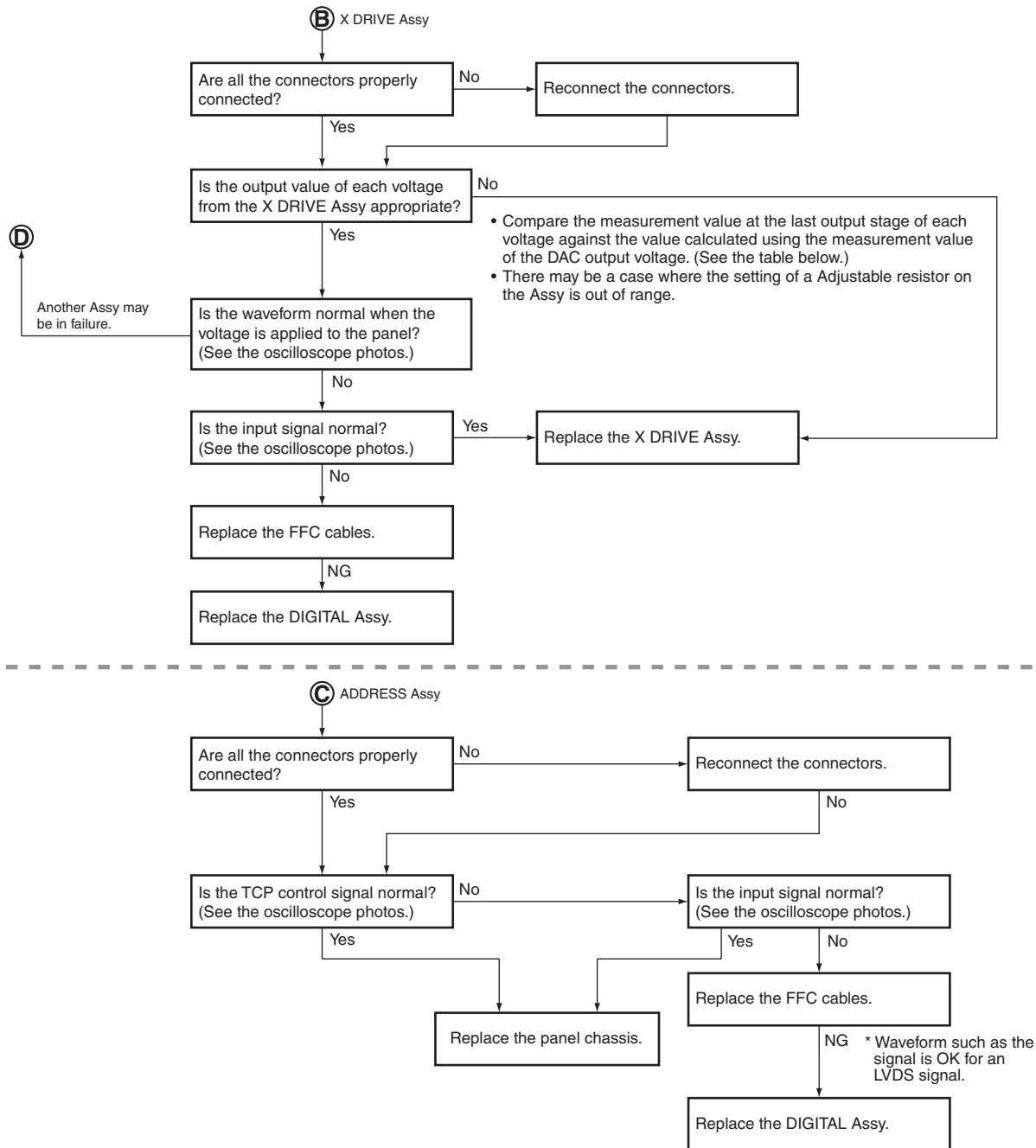
D

E

F







Assy Name	Voltage to be Checked (V)	Adjustable Range		Measurement Point		Computation Formula for Voltage (Absolute Value)	
		50-inch (LFT)	50-inch (Others)	Output at the Last Stage	DAC Output (*2)	Computation Using DAC Output Voltage (V)	Computation Using Adjustment Value (*4)
Y DRIVE Assy	VSNOFS	101 to 157	085 to 140	CN2404 (*1)	Lower side of R2723 (*3)	$55.54 - \text{VOFS_ADJ} \times 13.91$	$\text{VOF value} \times 0.18 + 9.6$
	VYRST	001 to 074	001 to 093	CN2401 (*1)	Upper side of R2621 (*3)	$\text{VYPRST_ADJ} \times 62.495 + 75.2$	$\text{VRP value} \times 0.81 + 74.4$
	VKN0FS1_2	121 to 164	117 to 159	CN2405 (*1)	Left side of R2754 (*3)	$\text{YVKN0FS1_ADJ} \times 36.85 + 159.3$	$(\text{V1F value} + \text{VYF value} - 128) \times 0.48 + 158.8$
	VKN0FS3	107 to 149	107 to 149	CN2403 (*1)	Right side of R2757 (*3)	$\text{YVKN0FS3_ADJ} \times 36.85 + 159.3$	$(\text{V3F value} + \text{VYF value} - 128) \times 0.48 + 158.8$
	VKN0FS4	151 to 193	128 to 170	CN2406 (*1)	Right side of R2755 (*3)	$\text{YVKN0FS4_ADJ} \times 36.85 + 159.3$	$(\text{V4F value} + \text{VYF value} - 128) \times 0.48 + 158.8$
X DRIVE Assy	XK0FS1	085	085	CN1302 (*1)	K1402 (*1)	$\text{XKN0FS1_ADJ} \times 27.3 + 30$	$\text{VX1 value} \times 0.35 + 29.7$
	XK0FS2	047	047	CN1301 (*1)	K1401 (*1)	$\text{XKN0FS2_ADJ} \times 25.0 + 69.8$	$\text{VX2 value} \times 0.32 + 69.5$

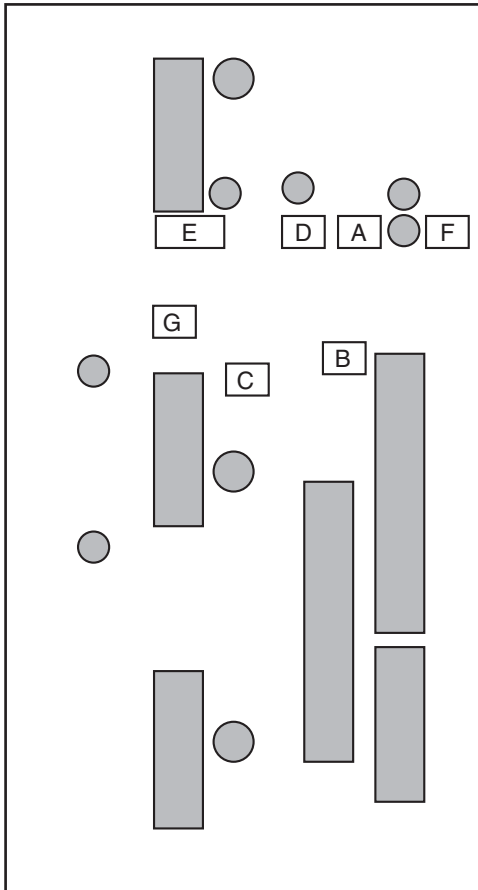
(*1): These parts have not been mounted.

(*2): It is recommended to measure the DAC output voltage with the drive off.

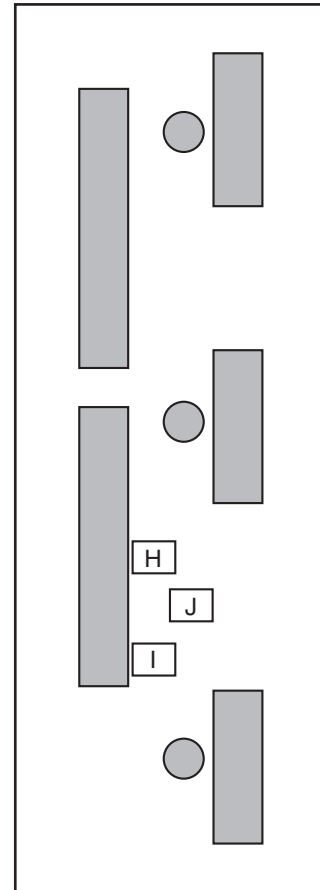
(*3): View when the Assy is mounted on the unit and viewed from the rear.

(*4): The value calculated using an adjustment value may be different from the value measured at the last output stage, because various corrections such as temperature correction are not taken into consideration.

Diagrammatic view of the Y DRIVE Assy



Diagrammatic view of the X DRIVE Assy



A	R2754,R2755,R2757
B	R2723
C	R2621
D	CN2405
E	CN2403,CN2406
F	CN2404
G	CN2401
H	K1401
I	K1402
J	CN1301,CN1302

A

Failure analysis for the drive system => DR3

Diagnose the ADDRESS Assy.

The abnormality is associated with one ADDRESS or one TCP.

Is the TCP control signal normal?

No

Are the FFC cables properly connected?

No

Properly connect the FFC cables.

Yes

Yes

NG

B

Replace the panel chassis.

NG

Replace the DIGITAL Assy.

Yes

If the FFC cable that connects the DIGITAL and ADDRESS Assys is in failure, the abnormality is associated with one address in most cases.

In most cases of damage on one line, the panel chassis must be replaced.

C

Failure analysis for the drive system => DR4

Diagnose the SCAN Assy.

The abnormality is associated with a single scan line.

Is the waveform normal when the voltage is applied to the panel?
(See the oscilloscope photos.)

No

Is the 15P connector connected properly to the socket?

No

Reconnect the connector properly.

Yes

Yes

NG

Note1

Is the waveform of the SCAN IC control signal from the Y DRIVE Assy normal?

No

Replace the Y DRIVE Assy.

Yes

D

Replace the SCAN IC.

NG

Replace the panel chassis.

E

Note 1:

In a case where confirmation of the waveform for a particular line is impossible with an oscilloscope, it is possible to identify a defective line by lighting a particular line, using the following commands: (The SCAN IC outputting each line refers to the table.)

PON

FAY

MKRS01

BSMS01 (Command for reducing phosphor burn-in)

\$250000**** (In place of ****, input a figure between 0001 and 1080, which denotes an ordinal number of a particular line.)

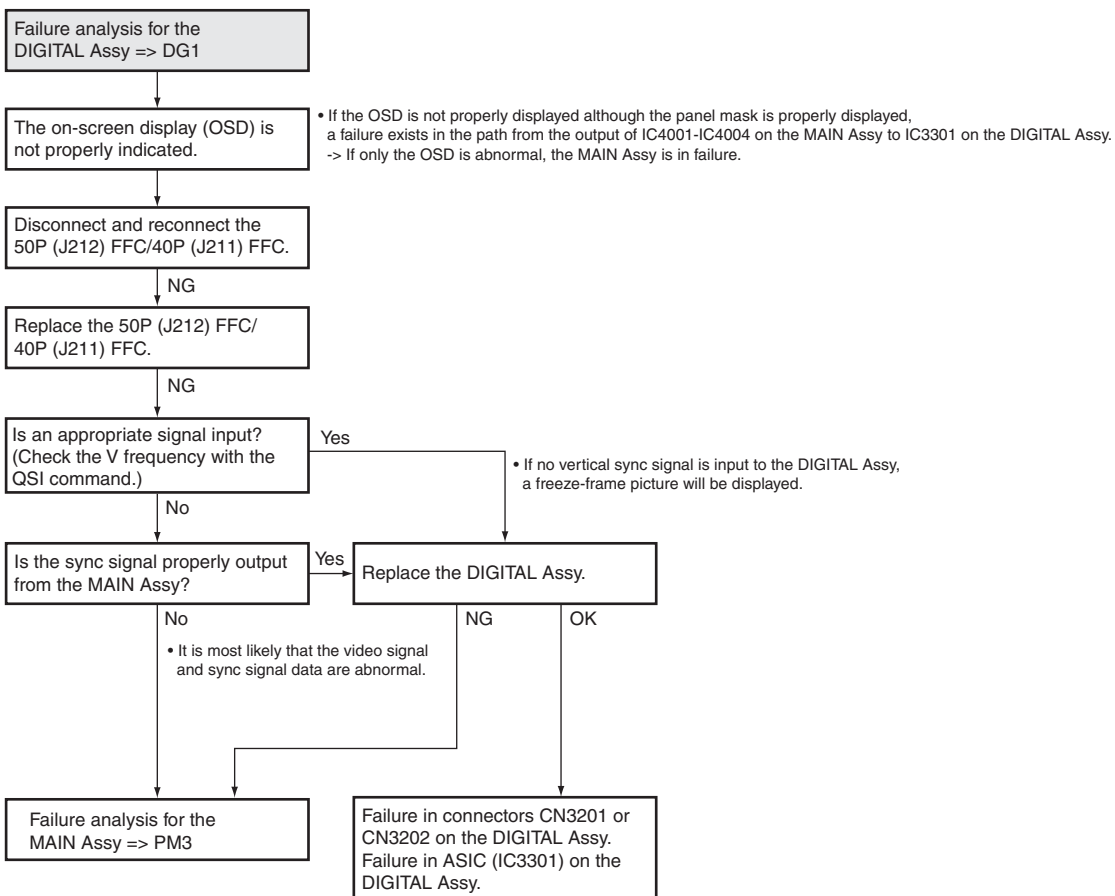
With the above commands, a particular line lights. Be careful to light a line for as short a time as possible, to avoid phosphor burn-in.
After a particular line is identified, display an all-white screen to protect the screen from burn-in.

F

IC No.	Line Number	Object Line
No 1	66	0001 to 0066
No 2	68	0067 to 0134
No 3	68	0135 to 0202
No 4	68	0203 to 0270
No 5	68	0271 to 0338
No 6	68	0339 to 0406
No 7	68	0407 to 0474
No 8	66	0475 to 0540
No 9	66	0541 to 0606
No 10	68	0607 to 0674
No 11	68	0675 to 0742
No 12	68	0743 to 0810
No 13	68	0811 to 0878
No 14	68	0879 to 0946
No 15	68	0947 to 1014
No 16	66	1015 to 1080

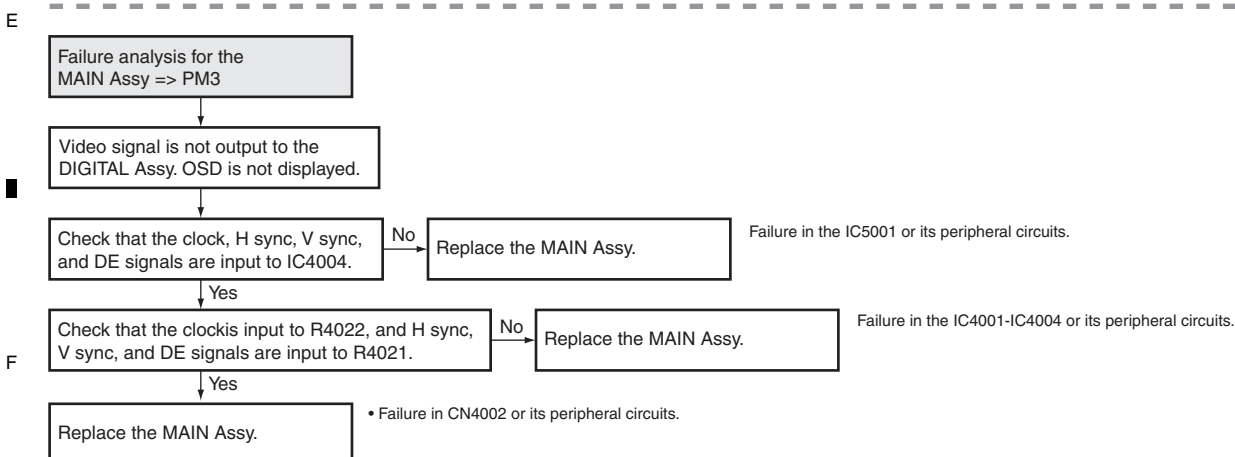
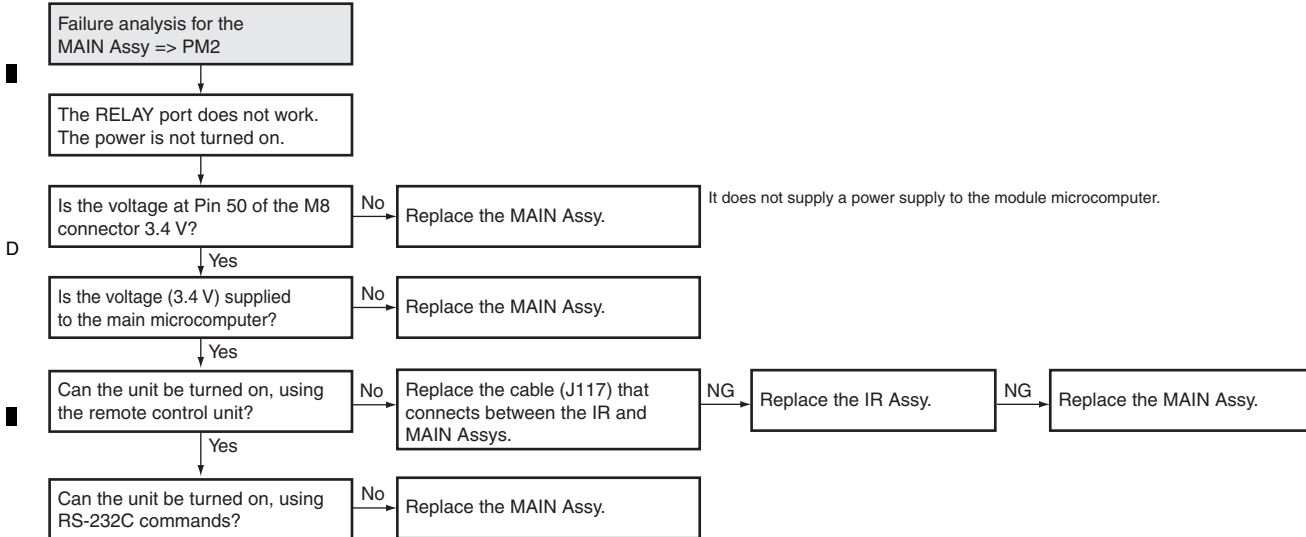
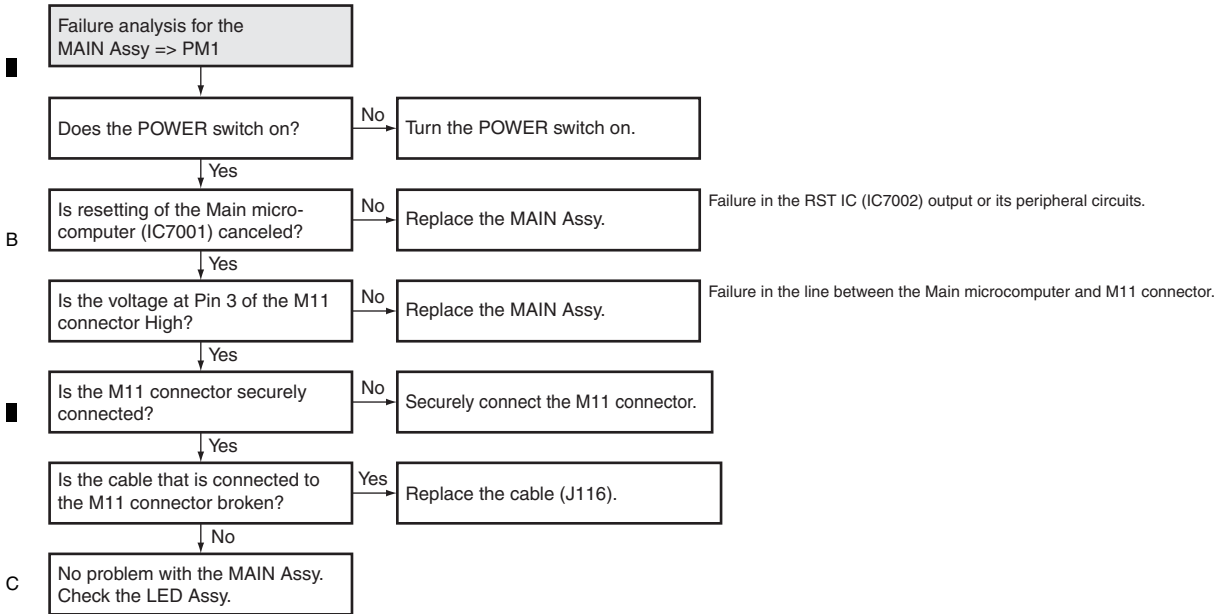
[4] DIGITAL ASSY

Flowchart of Failure Analysis for The DIGITAL Assy



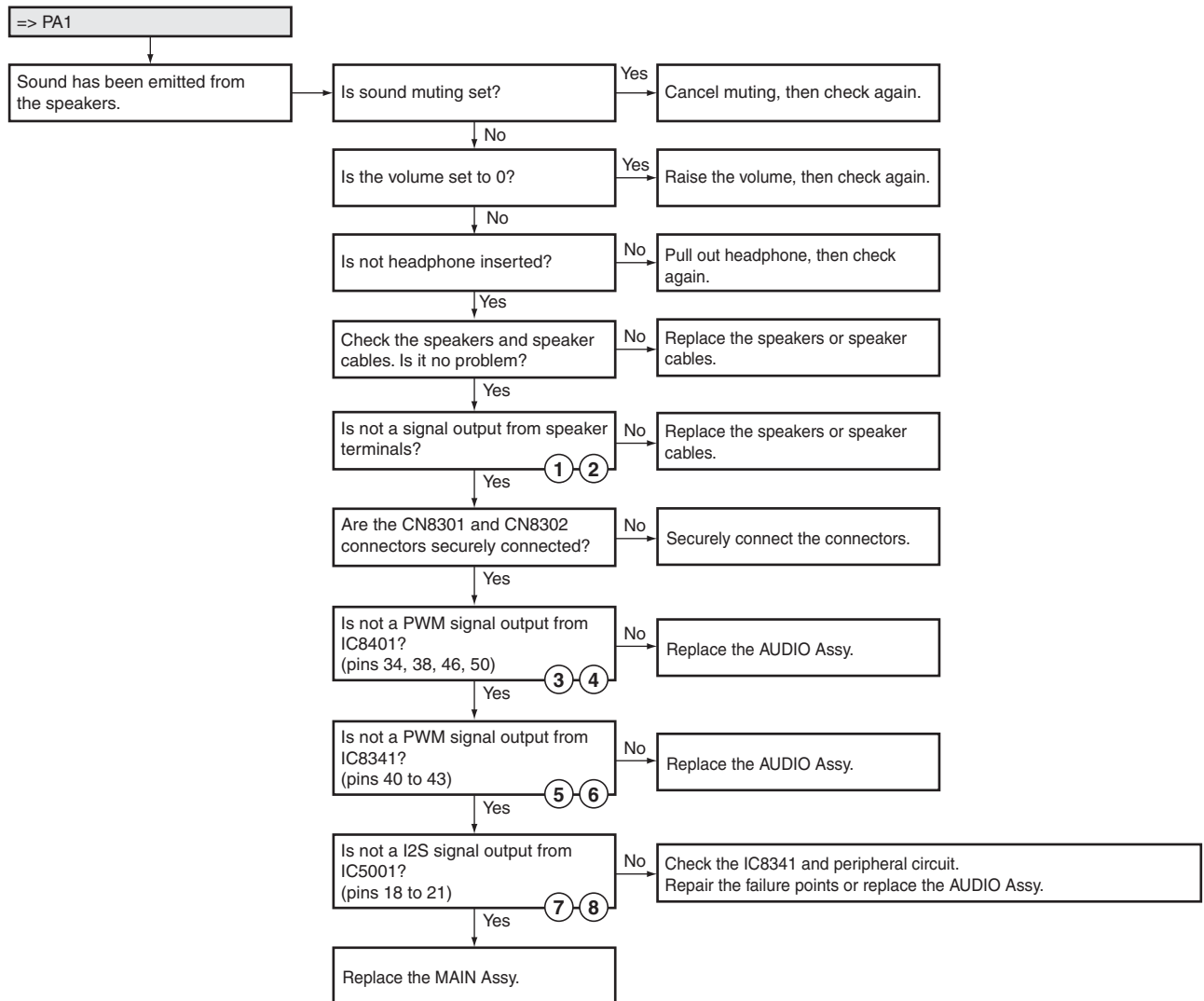
A [5] MAIN ASSY (PANEL INTERFACE)

Flowchart of Failure Analysis for The MAIN Assy



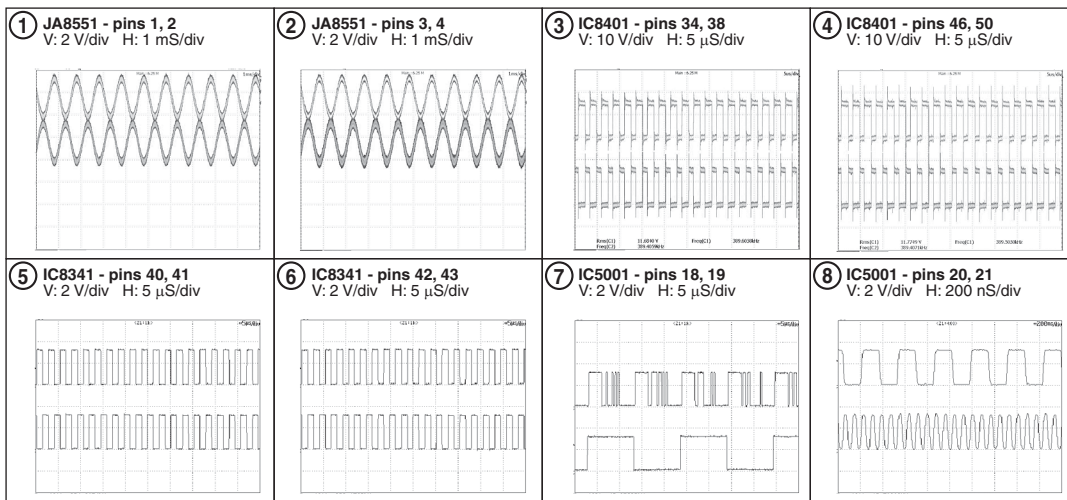
[6] AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System



• Waveforms

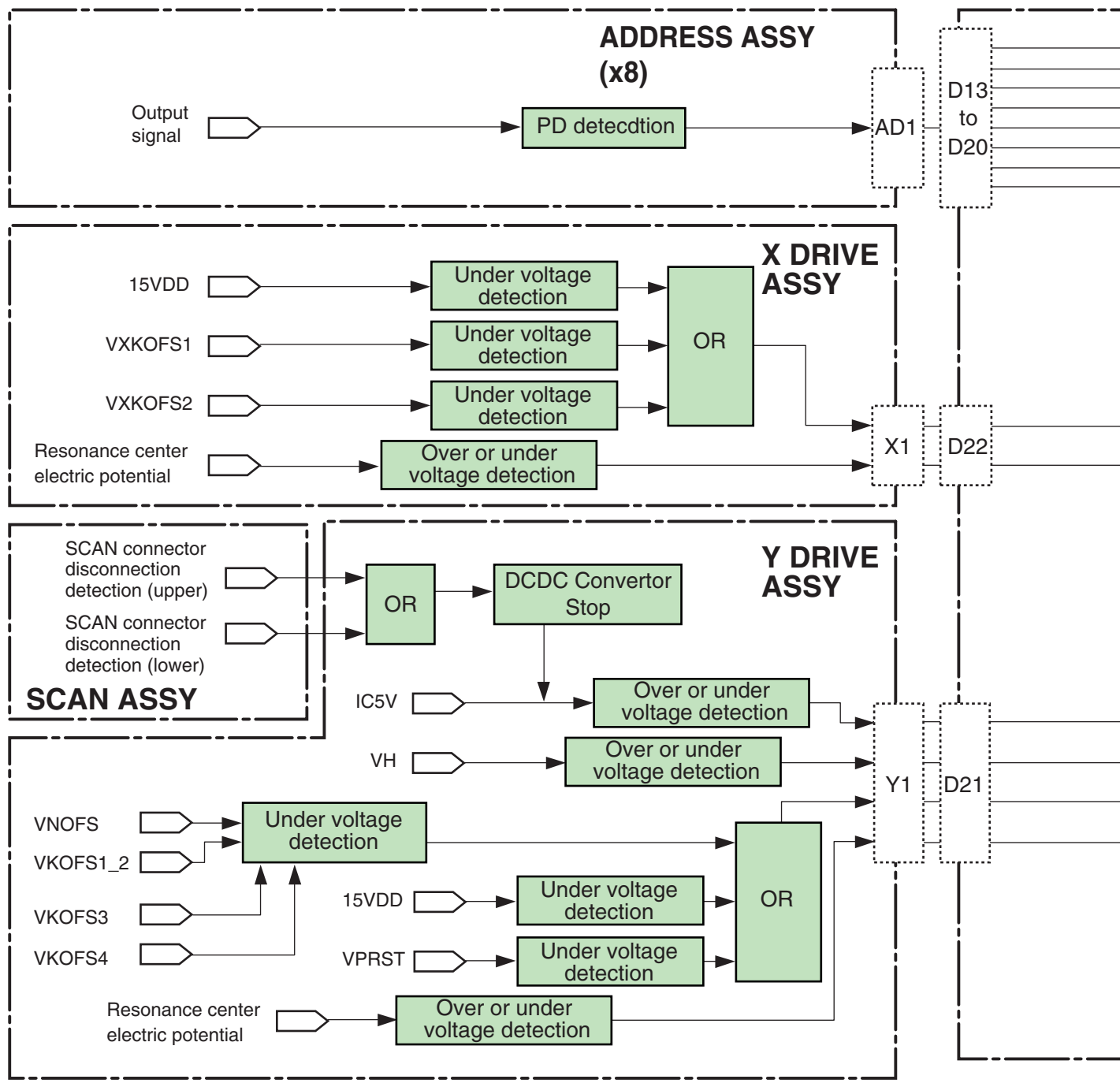
Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



1 2 3 4

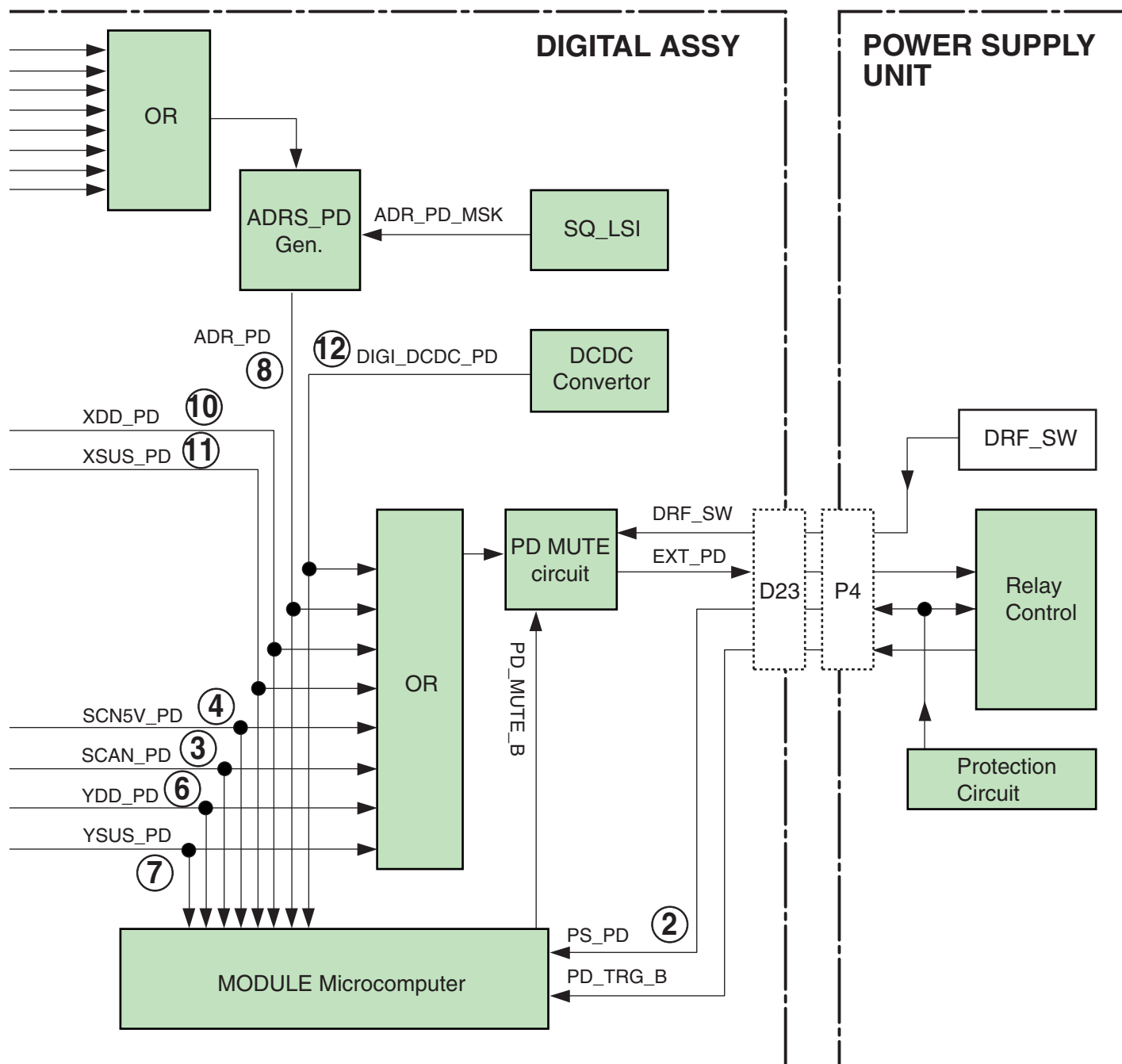
5.3 DIAGNOSIS OF PD (POWER-DOWN)

A [1] BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL



Note:

The figures ② to ⑫ indicate the number of times the Red LED flashes when power-down occurs in the corresponding route.

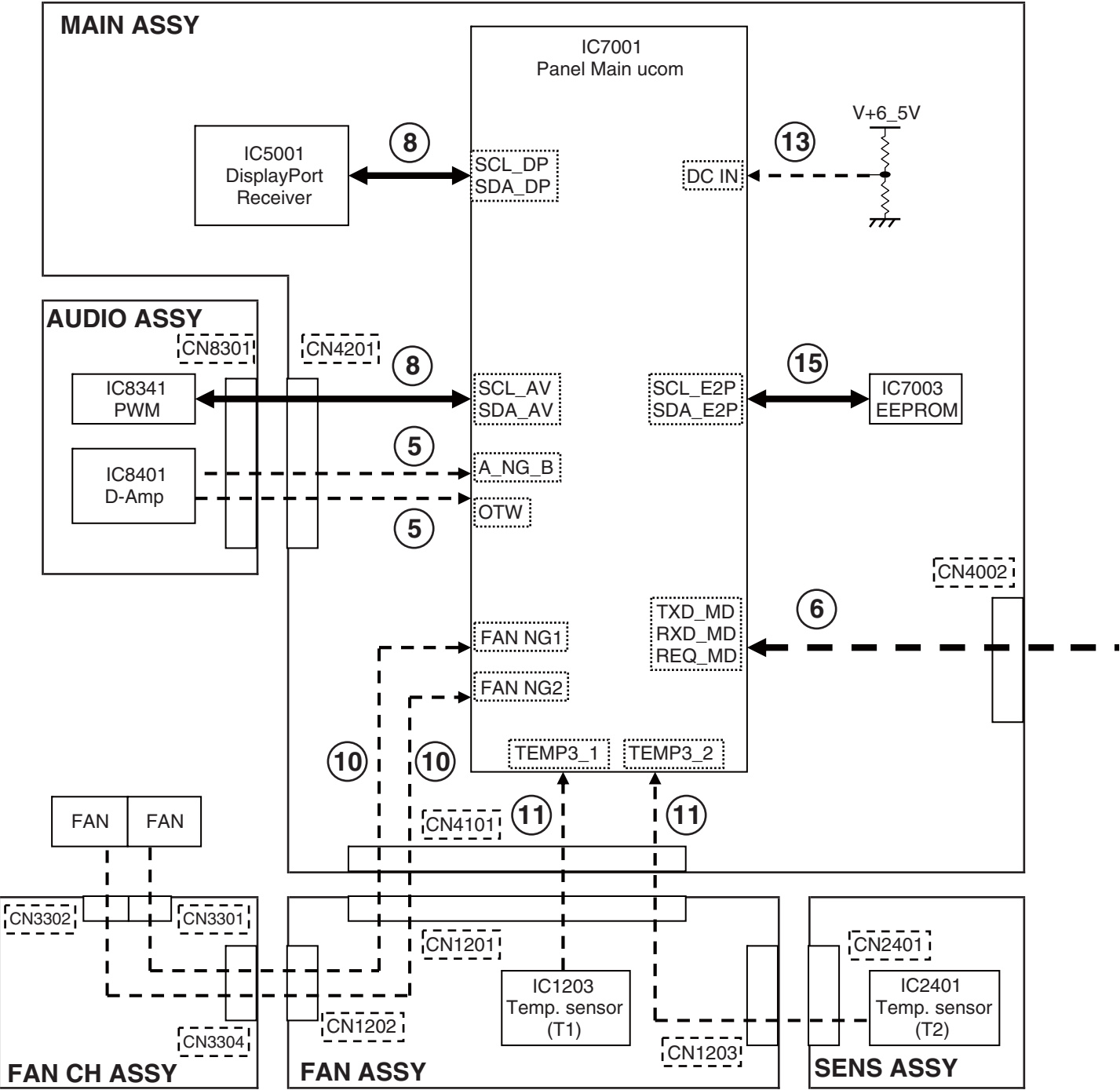


[2] PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

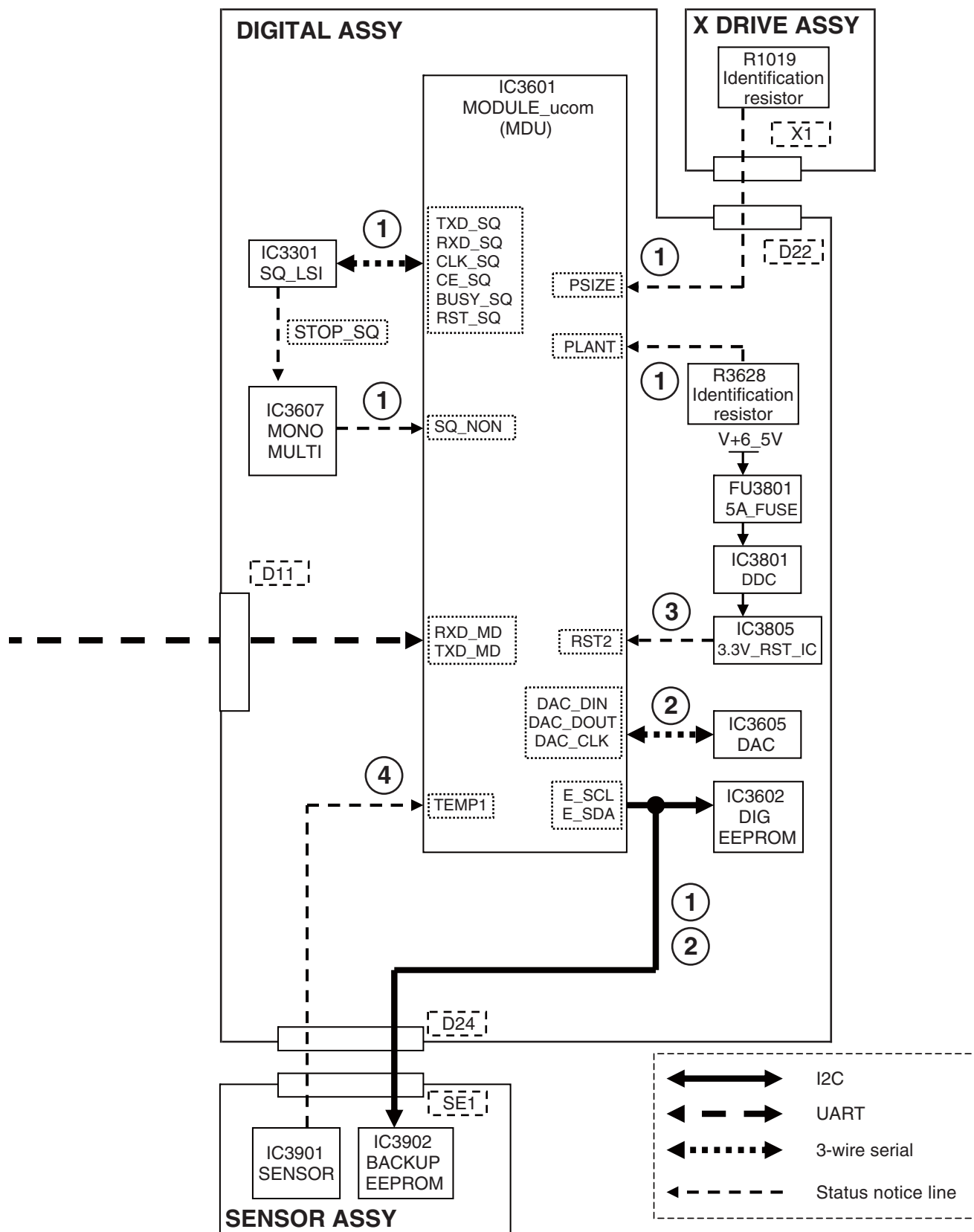
Red LED Flashing Count	Factory History Display	Defective Assy	PD Outline	Checkpoint	
2	P-PWR	POWER SUPPLY Unit	Each PD in the POWER SUPPLY Unit		
			Connector disconnection	Connector [P14][P15] (60"only)	
		X DRIVE Assy	VSUS under voltage protection	X SUS block	
		Y DRIVE Assy	VSUS under voltage protection	Y SUS block	
		ADDRESS Assy	Connector disconnection	Connector [AD1]	
		DIGITAL Assy	Connector disconnection	Connector [D13] to [D20]	
3	SCAN	SCAN Assy		SCAN IC	
		X DRIVE Assy	VH over or under voltage protection	X SUS block	
		Y DRIVE Assy		Y SUS block	
				VH DC/DC	
				OFFSET block	
			Connector disconnection	Connector [Y1][Y2]	
4	SCN5V	DIGITAL Assy	Connector disconnection	Connector [D21]	
		SCAN Assy	Connector disconnection	Connector [SA1][SB1][SB2][SC1][SC2][SD1]	
		Y DRIVE Assy	IC5V over or under voltage protection	SCAN IC	
6	Y-DCDC	Y DRIVE Assy	VNOFS under voltage protection	IC5V DC/DC	
				Y MSK block	
				NOFS block	
				VNOFS DC/DC	
			VYPRST under voltage protection	VPRST regulaotr	
				PR-U block	
			15VDD under voltage protection	15V DC/DC	
				SOFT-G block	
			VKOFs1,2 under voltage protection	Y MSK block	
				KNOFS2 block	
				VYKOFs1, 2 regulaotr	
			VKOFs3 under voltage protection	Y MSK block	
	VYKOFs3 regulaotr				
7	Y-SUS		Y MSK block		
		VKOFs4 under voltage protection	Y MSK block		
		KNOFS4 block			
		VYKOFs4 regulaotr			
7	Y-SUS	Y DRIVE Assy	Over or under voltage protection of the center electric potential	Y resonance block	
		DIGITAL Assy	SQ_LSI does not operate	SEQ_LSI (Sync input, output waveform)	
8	ADRS	ADDRESS Assy	VADR under voltage protection	Address resonance block	
			Connector disconnection	TCP	
			Connector [AD1][AD2]		
		DIGITAL Assy	Connector disconnection	Connector [D13] to [D20]	
		Y DRIVE Assy	Connector disconnection	Connector [Y2][Y5][Y6]	
		X DRIVE Assy	Connector disconnection	Connector [X2][X3][X4]	
10	X-DCDC	POWER SUPPLY Unit	Connector disconnection	Connector [P1][P2]	
		X DRIVE Assy	Connector disconnection	Connector [X1][X2]	
			15VDD under voltage protection	X SUS block	
				15V DC/DC	
			VXKOFs1 under voltage protection	VXKOFs1 regulaotr	
				X OFFSET block	
			VXKOFs2 under voltage protection	VXKOFs2 regulaotr	
	X OFFSET block				
	DIGITAL Assy	Connector disconnection	Connector [D22]		
11	X-SUS	X DRIVE Assy	Over or under voltage protection of the center electric potential	X resonance block	
12	D-DCDC	DIGITAL Assy	3.3V,2.5V,1.1V	DC/DC controlo IC	
			Over voltage/under voltage/overcurrent protection	DC/DC block	
15	UNKNOWN	POWER SUPPLY Unit	Connector disconnection	Connector [P4]	
		DIGITAL Assy	Connector disconnection	Connector [D23]	
			ModuleUcom can not detection	Each PD line of ModuleUcom	

Possible Defective Part	Remarks
	The POWER SUPPLY Unit of 60 inches model is a structure of the two parts.
Q1218,Q1219,Q1221-Q1223,Q1226	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
Q2217-Q2224	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
each SCAN IC	The abnormality of the SCAN IC
Q1218,Q1219,Q1221-Q1223,Q1226	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
Q2217-Q2219,Q2221-Q2223	VSUS-SUSOUT and SUSOUT-SUSGND are short-circuited.
IC2601,IC2603,IC2604	
Q2401,Q2402	KNOFS1 and KNOFS3 are short-circuited.
	[SB2][SC1][SC2][SD1] are 60 inches model only.
each SCAN IC	
Q2764,D2768,R2764	
Q2321-Q2326,Q2328-Q2331,Q2333,Q2334	L MSK is short-circuited.
Q2424,Q2429	NOFS is short-circuited.
D2606,Q2709-Q2711	
Q2604,Q2605,IC2602	
Q2418	PR-U is short-circuited.
Q2662,R2669,L2301,R2335	
Q2427	SOFT-G is short-circuited.
Q2321-Q2326,Q2328-Q2331,Q2333,Q2334	L MSK is short-circuited.
Q2430	KNOFS2 is short-circuited.
Q2702,Q2705,R2714	
Q2321-Q2326,Q2328-Q2331,Q2333,Q2334	L MSK is short-circuited.
Q2703,Q2706,R2715	
Q2321-Q2326,Q2328-Q2331,Q2333,Q2334	L MSK is short-circuited.
Q2432	KNOFS4 is short-circuited.
Q2704,Q2707,R2717	
Q2106-Q2109,Q2111,Q2113,D2104-D2107	
IC3301,IC3302	The history of SD1 remains
Q1711,Q1721,Q1731,Q1741,Q1911,Q1921,Q1931,D1711,D1721,D1731,D1741,D1911,D1921,D1931	
TCP (IC1651,IC1661,IC1671,IC1681,IC1851,IC1861,IC1871)	When the TCP is damaged, replace the panel.
	Ref No. of L Assy (6 pieces) and S Assy (2 pieces) are common use.
L1201,R1217	
Q1402	
Q1405,Q1406	
Q1302,Q1304	
Q1403,Q1404	
Q1301,Q1303	
Q1108,Q1112,Q1116,Q1119	
IC3801	
Q3841,Q3861,Q3881,L3841,L3861,L3881	
R3820,R3848,R3868,R3888	
	EXT_PD line : Open
	EXT_PD line : Open
	It becomes "UNKNOWN" except above-mentioned PD detection condition.

[1] BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL



Note : The figures ① to ⑮ indicate the number of times the Blue LED flashes when shut-down occurs in the corresponding route.



[2] SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		
			MAIN	SUB	
Blue 1	Abnormality in the Sequence LSI	Communication error	SQ-LSI	RTRY	
		Drive stop		SQNO	
		Busy		BUSY	
		Version mismatching (hardware, software)		VER-HS	
		Version mismatching (hardware, backup memory)		VER-HM	
		Version mismatching (hardware, DIGITAL memory)		VER-HI	
Blue 2	Failure in module microcomputer device communication	Digital EEPROM	MD-DEV	EEPROM	
		Backup EEPROM		BACKUP	
		DAC IC		DAC	
Blue 3	Abnormality in RST2 power decrease	—	RST2	—	
Blue 4	Abnormality in panel temperature	Abnormality in high temperature	TMP-NG	TMP-H	
		Abnormality in low temperature		TMP-L	
Blue 5	Short-circuiting of the speakers D-AMP temperature abnormality	—	AUDIO	AUDIO	
				OTW	
Blue 6	Failure in communication with the module microcomputer	—	MODULE	—	
Blue 8	Failure in IIC communication with the panel main microcomputer	Display Port Rx	PM-IIC	DP-RX	
		PWM Processor		PWM	
Blue 10	Abnormality in FAN	FAN1	P-FAN	FAN1	
		FAN2		FAN2	
Blue 11	High temperature of the unit	T1 (for outside)	TEMP3	T1	
		T2 (for inside)		T2	
Blue 13	Failure in the power supply of the MAIN Assy	Vcc power decrease of the MAIN Assy	MB-POW	RELAY	
Blue 15	Failure in communication with the EEPROM of the panel main microcomputer	—	—	—	

A

Checkpoint	Possible Defective Part	Remarks
Communication line between MDU and SQ_LSI	IC3601/IC3301	SQ_IC communication not established. IC3301 may not have properly started up.
Drive detectig signal of MDU (SQ_NON)	CN3201/IC3601/ IC3301/IC3607	A shutdown occurs if the drive waveform periodically does not output. (When SQ_NON of MDU input is High, a shutdown is generated.)
Communication line between MDU and SQ_LSI (BUSY_SQ)	IC3601/IC3301	If BUSY_SQ remains high, a shutdown is generated.
Check the DIGITAL Assy and the software version of SEQ and the destination of the panel. Check the connection between [X1] and [D22].	IC3601/IC3301	When the identification resistor of PSIZE/PLANT and software version of SEQ are incoherent, a shutdown occurs.
Check the DIGITAL Assy and the software version of SEQ and the destination of the panel. Check the connections between [X1] and [D22], and [SE1] and [D24]. Communication line between MDU and BACKUP EEPROM	IC3601/ SENSOR Assy(IC3902)	When the identification resistor of PSIZE/PLANT and stored content of EEPROM on the SENSOR Assy are incoherent, a shutdown occurs.
Check the DIGITAL Assy and the software version of SEQ and the destination of the panel. Check the connections between [X1] and [D22]. Communication line between MDU and DIG EEPROM	IC3601/IC3602	When the identification resistor of PSIZE/PLANT and stored content of EEPROM on the DIGITAL Assy are incoherent, a shutdown occurs.
Communication line between MDU and DIG EEPROM	IC3601/IC3602	
Communication line between MDU and BACKUP EEPROM	IC3601/SENSOR Assy(IC3902)	
Communication line between MDU and DAC	IC3601/IC3605	
3.3 V output (TP3881) of DDC	IC3801/IC3805	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
V+6.5V of POWER SUPPLY Unit (Check [D25][P4]) FU3801 has melted.	POWER SUPPLY Unit, FU3801	Check if V + 6.5 V is started. Also check if the FU3801 on the DIGITAL Assy has been melted.
Installation environment	SENSOR Assy (IC3901)	If TEMP1 that is read by the module microcomputer is 85 °C or higher, a shutdown will be generated.
Installation environment Check the connection between [SE1] and [D24].	SENSOR Assy (IC3901)	If TEMP1 that is read by the module microcomputer is -20 °C or less, a shutdown will be generated. Also check the connection between SE1 and D24.
Speaker terminals	JA8551	Check if any speaker cable is in contact with the chassis.
D_AMP	IC8401	Check if the AMP output is short-circuited.
6.5 V power supply for AUDIO Assy	R4203	Check that V+6.5 V is activated in the AUDIO Assy. If it is not, check if R4203 on the MAIN Assy is open.
Periphery of the cable between MAIN and AUDIO, and POWER SUPPLY and AUDIO Assys	CN4201,CN8301, CN8302	Check if cables are firmly connected.
D_AMP	IC8401	Check the temperature of D_AMP IC that is 125 °C or higher.
Communication line between main ucom and module ucom	IC7001,IC3601	Check the communication lines (TXD_MD/RXD_MD/REQ_MD).
Periphery of the cable between MAIN and DIGITAL Assys	CN4002,CN3201	Check if cables are firmly connected.
Communication line between main ucom and DisplayPort Rx	IC7001,IC5001	Check the communication lines (SCL_DP/SDA_DP).
Communication line between main ucom and PWM processor	IC7001,IC8341	Check the communication lines (SCL_AV/SDA_AV).
Periphery of the 3.3 V regulator for IC	IC8331	Check that the voltage outputs it.
Periphery of the cable between MAIN and AUDIO Assys	CN4201,CN8301	Check if cables are firmly connected.
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the cable between MAIN and FAN Assys	CN4101,CN1201	Check if cables are firmly connected.
Periphery of the cable between FAN and FAN CH Assys	CN1202,CN3304	Check if cables are firmly connected.
Periphery of the cable between FAN CH Assy and Fan motor	CN3302	Check if cables are firmly connected.
Periphery of the fan control regulator	IC1202	Check that the voltage outputs it.
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the cable between MAIN and FAN Assys	CN4101,CN1201	Check if cables are firmly connected.
Periphery of the cable between FAN and FAN CH Assys	CN1202,CN3304	Check if cables are firmly connected.
Periphery of the cable between FAN CH Assy and Fan motor	CN3301	Check if cables are firmly connected.
Periphery of the fan control regulator	IC1201	Check that the voltage outputs it.
Ambient temperature of the panel section and temp. sensor	IC1203	Shutdown occurs if the periphery of IC1203 (temp. sensor) is high temperature.
Periphery of the cable between MAIN and FAN Assys	CN4101,CN1201	Check if cables are firmly connected.
Periphery of the cable between FAN and SENS Assys	CN1203,CN2401	Check if cables are firmly connected.
6.5 V power supply of the MAIN Assy	CN4502	Check if V + 6.5 V is started.
Communication line between main ucom and EEPROM	IC7001, IC7003	Check the communcation lines (SCL_E2P/SDA_E2P)

B

C

D

E

F

A

[1] FUNCTION OF DECREASING THE BRIGHTNESS LEVEL

If the panel temperature becomes high or a video signal that requires activation of panel protection is input, the unit will protect the panel by decreasing the brightness level.

* While a mask is being displayed, the panel protection function will not be activated.

Protection Function Name	Purpose	Conditions	Protection Function	Remarks
High-temperature protection function 1	For protection of parts (DCF)	Panel temperature (TEMP1) reaches 65 °C.	Offsetting the ABL adjustment value	
High-temperature protection function 2	For reducing heating in the unit	Panel temperature (TEMP1) reaches 80 °C.	Limiting for the maximum number of SUS pulses	
Panel protection function 1	For preventing burn-in	A still image is displayed for 3 minutes or more.	Limiting for the maximum number of SUS pulses	The picture will be considered to be still if only the mouse cursor is moved.
Panel protection function 2	For protection of SCAN ICs	An image with which a particular load is applied to one SCAN IC is displayed. (See Fig. 2)	Limiting for the maximum number of SUS pulses	
Panel protection function 3	For protection against panel cracking	An image with which the heat of part in the panel is increased is displayed. (See Fig. 3)	Limiting for the maximum number of SUS pulses	

■ Limiting for the maximum number of SUS pulses

By gradually decreasing the limit for the maximum number of SUS pulses, the temperature of the panel will be lowered.

- The limit for the maximum number of SUS pulses will be decreased by 8 per 5 seconds.
- The lower limit for the maximum number of SUS pulses is about 700.
- The maximum number of SUS pulses will begin to increase gradually if the conditions that led to activation of the protection function return to normal.

■ ABL adjustment value offset

By gradually offsetting the ABL adjustment value, the temperature of the panel will be lowered. The number of SUS pulses, which is determined based on the input APL (average picture level), will be decreased.

- The ABL adjustment value will be offset by one step per 30 seconds.
- The ABL adjustment value will be gradually restored if conditions that let to activation of the protection function return to normal.

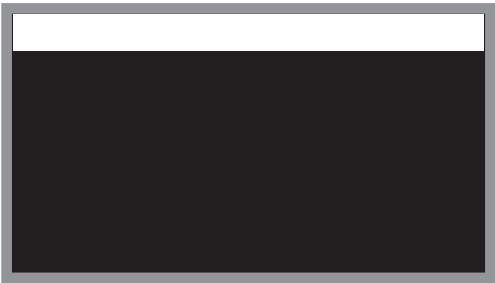


Fig. 2: Detection example: SCAN IC protection

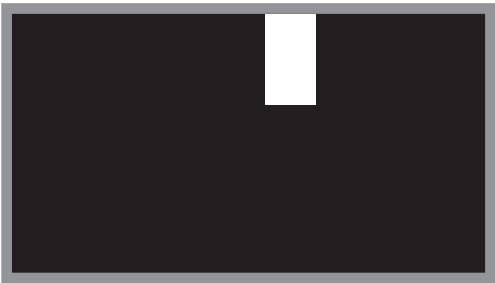


Fig. 3: Detection example: Protection against panel cracking

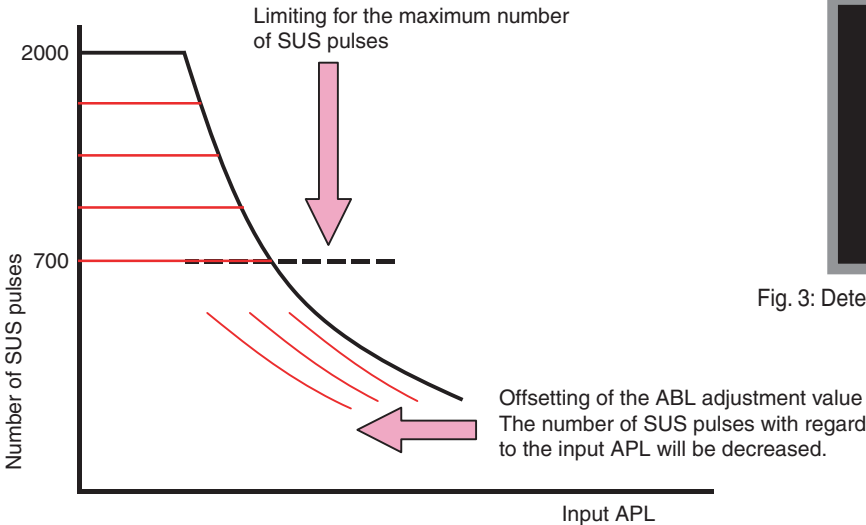


Fig. 1: Relationship between input APL and number of SUS pulses

[1] PANEL DRIVE-POWER ON/OFF FUNCTION

Function:

It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (Vsus, VAddress) in order to avoid a power down (PD).

Application:

1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the panel drive-power supply or with the other system power supply.

Method:

1. Short-circuit between the specified location of the POWER SUPPLY Unit and GND (Multi base section recommended), using a jumper with alligator clips (refer to the photos below).
2. Execute [DRV S00] by RS-232C command. ([DRV S01] for release)

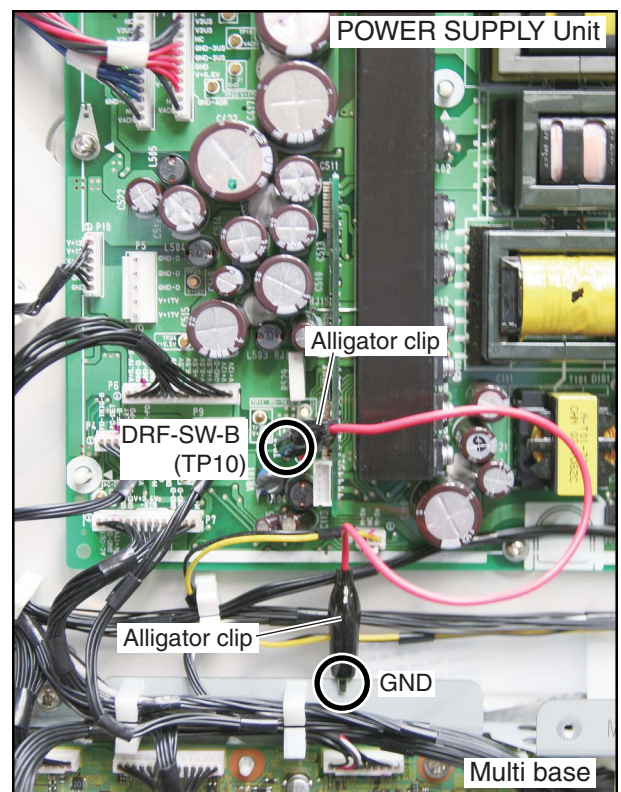
Supplemental explanation:

- When the panel drive-power is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the panel drive-power, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS-232C command control, [DRV S01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRV S00/S01] is effective even during standby.
- Setting with RS-232C commands or the remote control unit is enabled during Standby mode. However, if the unit is left unoperated for about 10 seconds in Standby mode after setting with RS-232C commands or the remote control unit is completed, the setting will become void.
- When the main power switch is set to OFF, no command is accepted.
- Setting with RS-232C commands or the remote control unit will become void if the AC power cord is unplugged, the main power switch is set to OFF, or the unit is left unoperated for about 10 seconds in Standby mode.

When the panel drive-power is ON



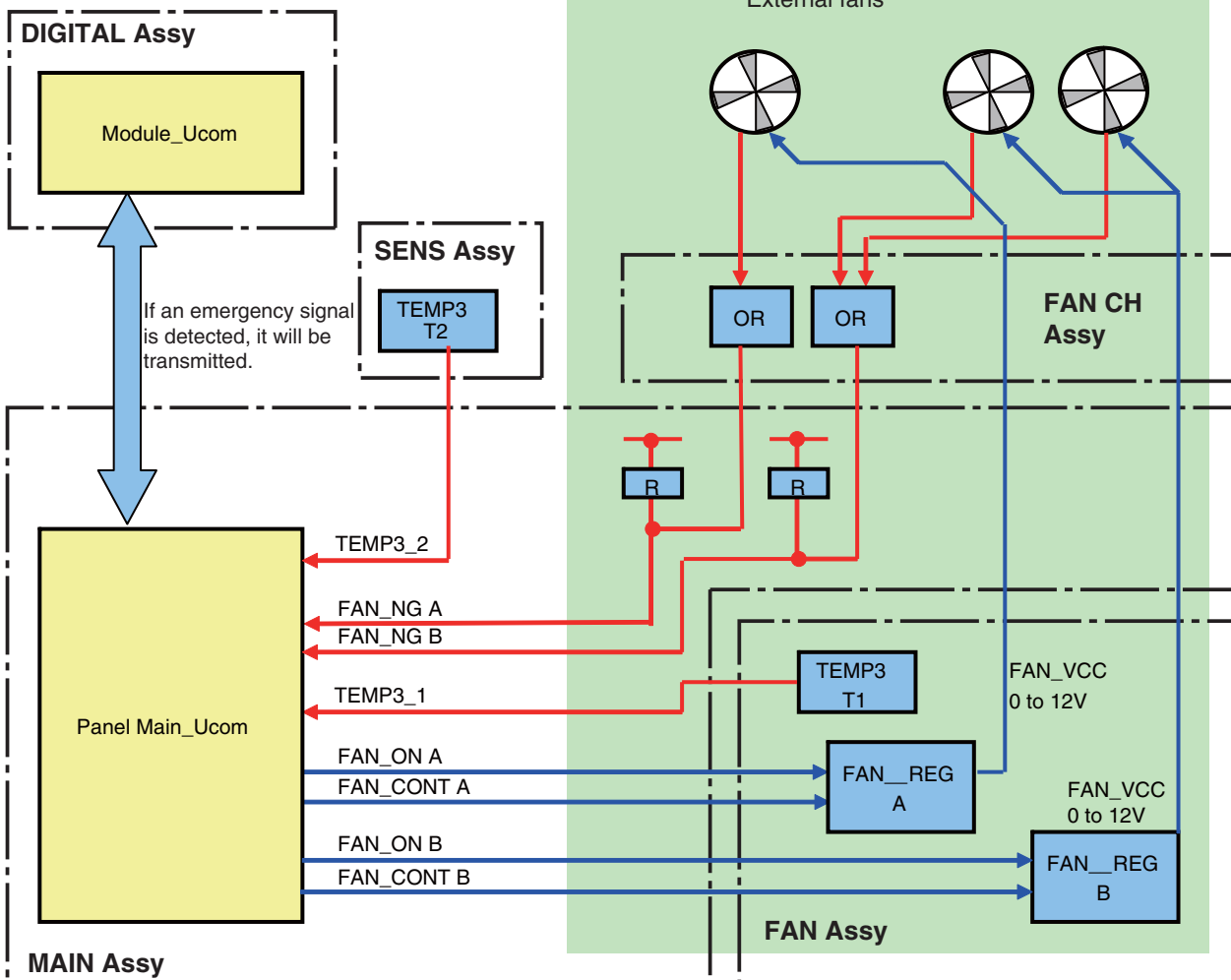
When the panel drive-power is OFF



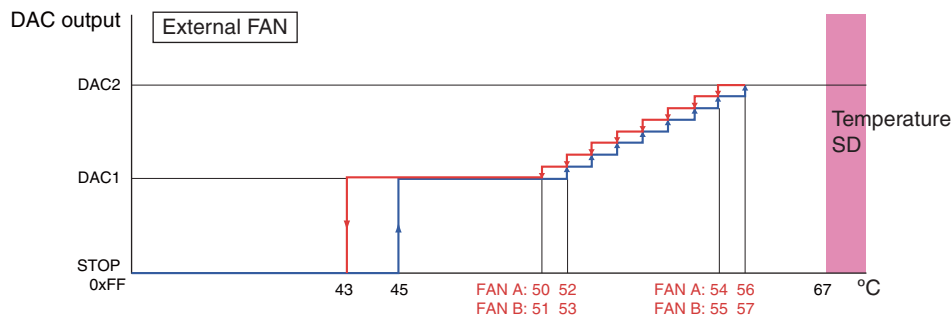
[2] SPECIFICATION OF THE FAN CONTROL

Block diagram

The external fans cool down the whole unit.



Operation specifications



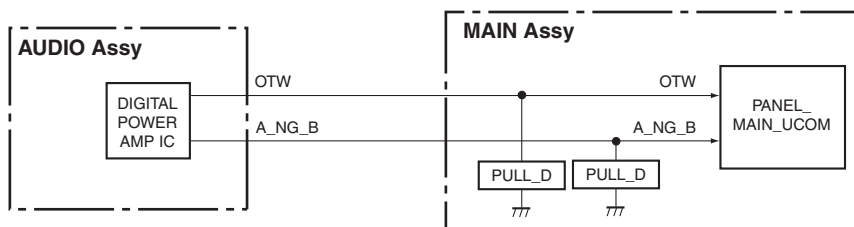
Notes:

- The operating temperature of the fan is higher than the ambient temperature, because the sensor temperature is read by the microcomputer.
- If the critical values for signals are displayed in the address circuit, the fan may be activated or be rotated at higher speed in response to values lower than the set temperature values shown above.
- Depending on the ventilation conditions behind the unit, the fan may be activated or be rotated at higher speed in response to values lower than the set temperature values shown above.
- When the temperature rises, the sensor voltage of TEMP3 increases.
- When the voltage of the DAC output from the Panel Main microcomputer decreases, rotation speed of the fan rises.
- Normally, the T1 temperature sensor output is used to control the fan.
- The T2 sensor detects the temperature inside the unit and assists T1.

[3] PROCESSING IN ABNORMALITY

Speaker short-circuit

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
A_NG_B	AUDIO	Shutdown occurs when the signal is "L." 30 mS * 10 times	DC_IN = "H" (always) (Monitoring starts 2 sec after the above conditions are established.)	The main CPU operations described below will be performed when either "A_NG_B = L" or "OTW = L" is detected (established) under the monitoring conditions.
OTW	AUDIO	Shutdown occurs when the signal is "L." 120 mS * 3 times		

● Operation specifications of the main CPU

- (1) Establish the short-circuit of the speaker by the main CPU
 - After a warning indication is displayed for 5 sec, a shutdown is generated (the blue LED flashes 5 times).
 - A warning indication is displayed for all input-signal types.
 - Example of a warning indication: "The speaker terminals are short-circuited. After reconnection, turn the unit on again."

(2) Display conditions

When the panel is on: A warning indication is displayed immediately.

When the panel is off: A warning indication is not displayed immediately but is displayed when the panel is turned on.

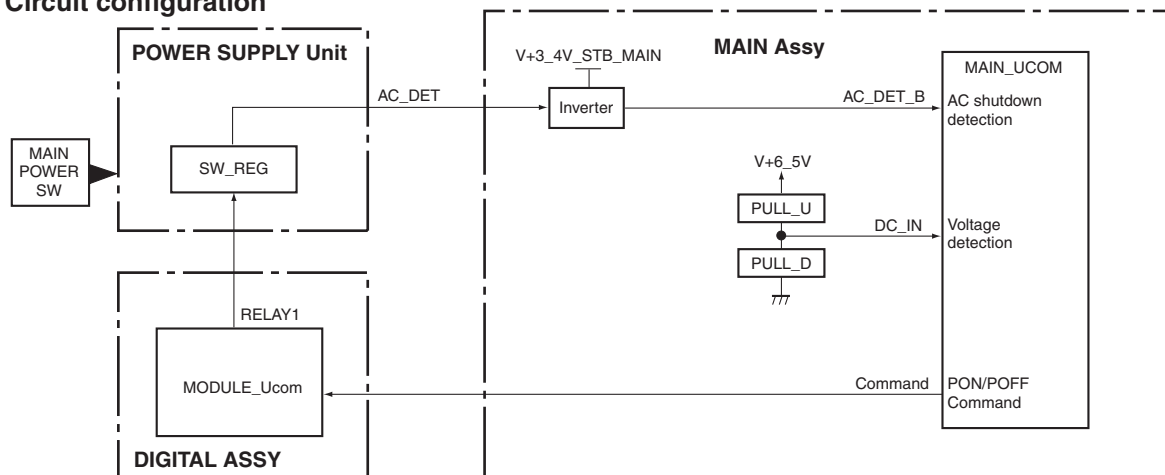
Note: A warning indication is displayed each time the panel is turned on if the conditions for a shutdown persist.

● Conditions for resetting the circuits

The circuits will be reset upon Standby ON/OFF.

Power supply

● Circuit configuration

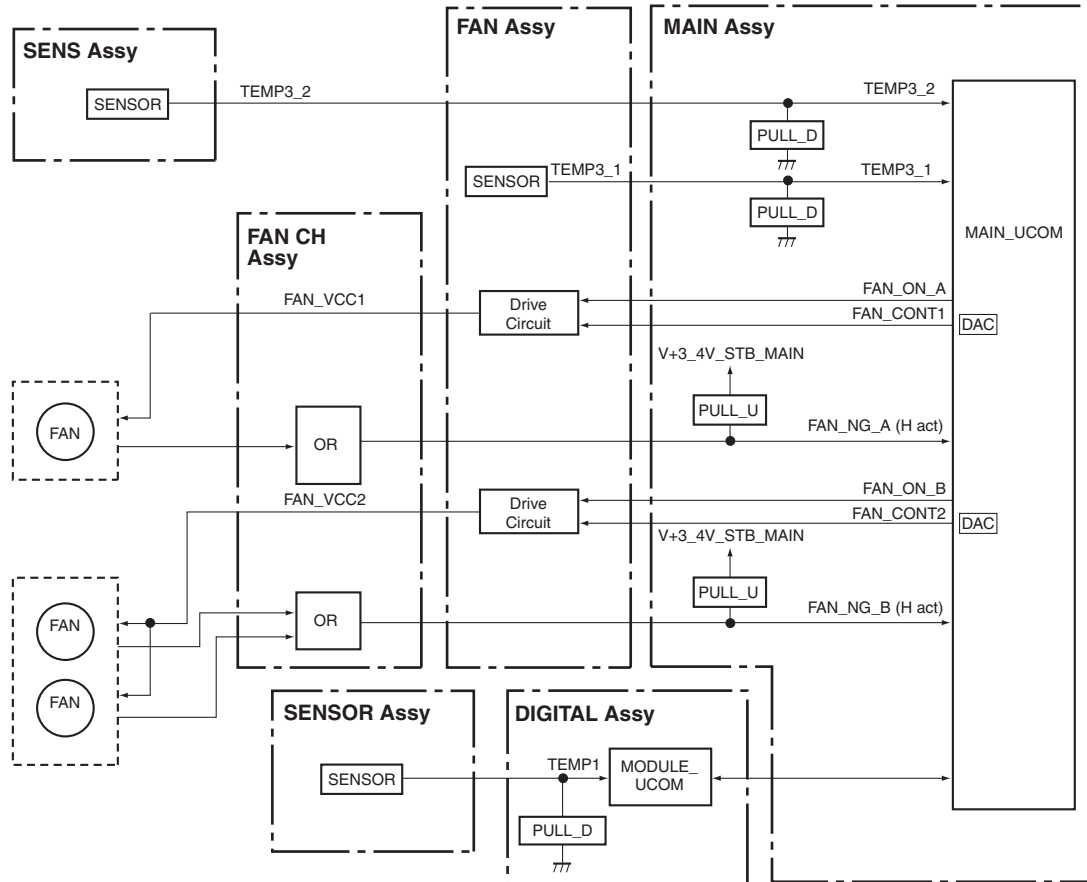


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
DC_IN	PANEL MAIN power (MB-POW)	If the signal to DC IN does not become H within 5 seconds after the PON command is issued, the unit will shut itself off.	• During panel screen ON	Shutdown occurs immediately Blue LED flashes 13 times

Fan and temperature sensor

● Circuit configuration



● Specifications for port monitoring

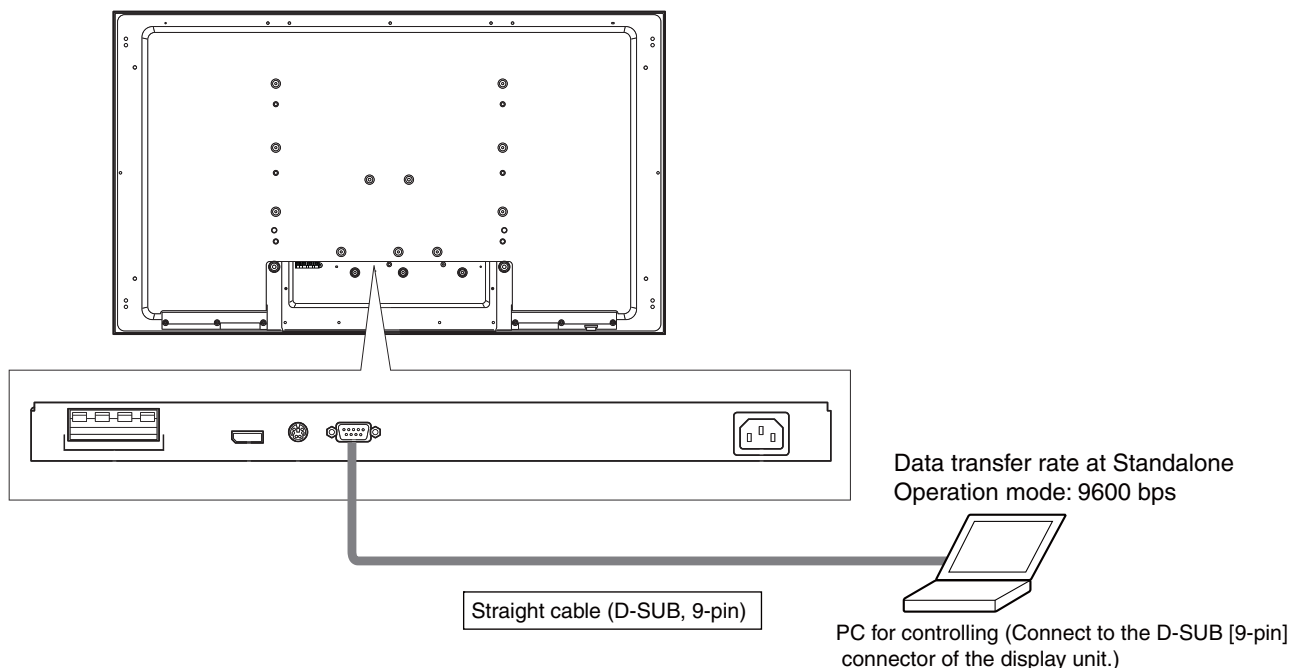
Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
FAN_NG_A FAN_NG_B	FAN	Shutdown occurs when the signal is "H." 1 S * 15 times	DC_IN = H and FAN_ON_A = H (Monitoring starts 3 sec after the above conditions are established.)	Shutdown occurs immediately Blue LED flashes 10 times
TEMP1	Panel temperature is high	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 200 mS * 5 times	Digital video RST2 = H	Shutdown occurs after waiting for 30 sec. Blue LED flashes 4 times
	Panel temperature is low			Shutdown occurs after waiting for 3 sec. Blue LED flashes 4 times
TEMP3_1	Ambient temperature of the display	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times	DC_IN = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. Blue LED flashes 11 times
TEMP3_2	Inside temperature of the display	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times	DC_IN = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. Blue LED flashes 11 times

[4] Standalone Operation Mode

Standalone Operation mode is available with the KRP-600P and KRP-500P, by issuing the RS-232C command shown below. After disconnecting the system cable, connect an RS-232C cable to the display unit to issue a command.

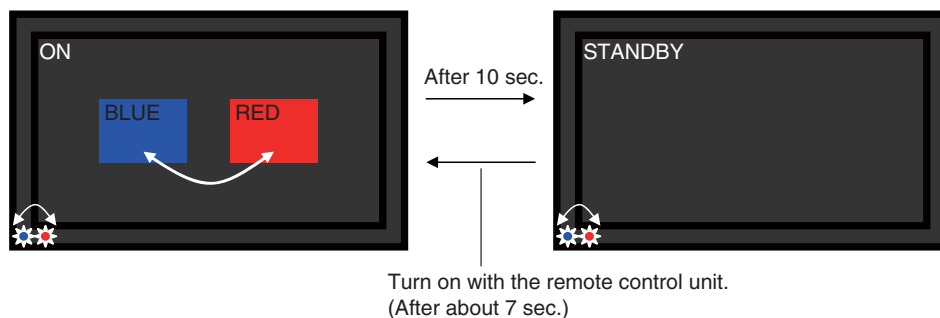
SYSS00: Standalone Operation mode

SYSS01: System Operation mode



Notes:

- To update the software for the display, disconnect the system cable, connect an RS-232C cable (straight), then perform updating.
- During System Operation mode, most of the RS-232C commands are invalid.
- The setting data during Standalone Operation mode immediately before the display is turned off will be stored in memory. After finishing operation in Standalone Operation mode, be sure to issue the SYSS01 command to return the display to System Operation mode before reconnecting it to the MR. If the display is connected to the MR without returning it to System Operation mode, the MR will automatically enter Standby mode soon after it is turned on, in which case no image will be displayed even though the display is turned on.
- No audio nor video signals are output if any display port cable other than the one for this display is connected to its system cable port (terminal). The mask signal (output in response to a mask command) is the only video output available during Standalone Operation mode.
- During normal System Operation mode (SYSS01) the display monitors the connection status with the MR. If communication between the MR and the display cannot be established for any reason, such as disconnection of the system cable or MR's AC power being off, a system error warning will be indicated with the LED and on the mask screen for about 10 seconds, after which the display will automatically shut itself off. (Even after power-off, flashing of the LED for warning continues.)



5.7 OUTLINE OF RS-232C COMMAND

A

[1] PREPARED TOOLS

- It is necessary to prepare the following one to use 232C command.
- PC
 - Application for control
 - 232C cable (straight)
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

B

[2] USING RS-232C COMMANDS

Issue the SYSS00 command to set the unit to Standalone Operation mode.

C

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5.8 LIST OF RS-232C COMMANDS

Note: While the display is in System Operation mode (SYSS01) with the Media Receiver (MR,) among the received commands via the RS-232C connector on the display, only the SYS commands are valid.
To enable other RS-232C commands, set the display to Standalone Operation mode (SYSS00).

RS-232C command list

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
A							
ABL	***	To adjust the upper limit of power	●		MOD	●	
ALM	S00	To enable SD operation of the display main unit		●	PM		
	S01	To disable SD operation of the display main unit		●	PM		
AP0	S**	Addresses L1 and L2 setting	●		MOD	●	For enabling changed setting, it is necessary to turn the unit off then back on again.
AP1	S**	Addresses L3 and L4 setting	●		MOD	●	
AP2	S**	Addresses U1 and U2 setting	●		MOD	●	
AP3	S**	Addresses U3 and U4 setting	●		MOD	●	
APN	***	Average number of pulses for 1V	●		MOD	●	
AMP	S00	To set audio muting to OFF		●			
	S01	To set audio muting to ON		●			
B							
BCP		To copy EEPROM data for backup	●		MOD	●	
BRA	S01	To set the baud rate for the RS-232C connector on the panel to 1200 bps		●	PM		Corresponding to reception via the RS-232C connector on the display
	S02	To set the baud rate for the RS-232C connector on the panel to 2400 bps		●	PM		
	S03	To set the baud rate for the RS-232C connector on the panel to 4800 bps		●	PM		
	S04	To set the baud rate for the RS-232C connector on the panel to 9600 bps		●	PM		
BSM	S00	Afterimage/Burn-In Reduction mode: OFF	●				
	S01	Afterimage/Burn-In Reduction mode: ON	●				
BZS	S00	Bezel Setup: EP		●	PM		For use by engineers
	S01	Bezel Setup: R1 (Black)		●	PM		
	S02	Bezel Setup: R2 (White)		●	PM		
	S03	Bezel Setup: R3 (Beige)		●	PM		
C							
CAL		To clear the NG (SD) history managed by the Panel Main microcomputer		●	PM	●	
CBU		To set Backup setting to "No backup"	●		MOD	●	
CHM		To clear hour-meter data	●		MOD	●	
CMT		To clear stored maximum-temperature data	●		MOD	●	
CPC		To clear the power-on count	●		MOD	●	
CPD		To clear the power-down history	●		MOD	●	
CPM		To clear pulse-meter data	●		MOD	●	
CSD		To clear the shutdown history of the DIGITAL Assy of the display unit	●		MOD	●	
CSF	S00	Color sensor function: OFF	●				
	S01	Color sensor function: ON	●				
CSM	S01	Color Space mode 1: Pioneer original standard	●				
	S02	Color Space mode 2: In compliance with the EBU standard	●				
CSB	***	Color sensor blue coefficient	●		MOD	●	
CSG	***	Color sensor green coefficient	●		MOD	●	
CSR	***	Color sensor red coefficient	●		MOD	●	
CTP	S00	Color temperature setting: OFF	●				
	S01	Color temperature setting: LOW	●				
	S02	Color temperature setting: MID LOW	●				
	S03	Color temperature setting: MID	●				
	S04	Color temperature setting: MID HIGH	●				
	S05	Color temperature setting: HIGH	●				
D							
DIZ	S00	Dither/L dither: OFF, noise: OFF	●			●	
	S01	Dither/L dither: ON, noise: ON	●			●	
	S02	Dither/L dither: OFF, noise: ON	●			●	
	S03	Dither/L dither: ON, noise: OFF	●			●	
DRV	S00	Panel drive-power: OFF	●				
	S01	Panel drive-power: ON	●				

A

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
F							
FAJ		To set the flag for DIGITAL Assy adjustment to “Adjusted”	●		MOD	●	
FAN		Factory mode: OFF	●	●		●	
FAY		Factory mode: ON	●	●			
FBM	S00	OFF (disabling in-phase SUS drive)	●		MOD	●	For enabling changed setting, it is necessary to turn the unit off then back on again.
	S01	MODE 1 (enabling in-phase SUS drive)	●		MOD	●	
FCP	S00	To cancel Panel FAN Control mode (Normal mode)		●	PM	●	
	S01	To set to Panel FAN Control MAX mode		●	PM	●	
	S02	To set to Panel FAN Control MIN mode		●	PM	●	
	S03	To set to Panel FAN Control STOP mode		●	PM	●	
FSP		To set the Panel main microcomputer to factory-preset values		●	PM	●	
L							
LED	S00	Display front indicators: All unlit		●		●	Corresponding to reception via the RS-232C connector on the display
	S02	Display front indicators: Normal operation		●		●	
	S10	Display front indicators: ON lit		●		●	
	S11	Display front indicators: STANDBY lit		●		●	
M							
MIR	S00	Mirror indication mode: OFF	●				
	S01	Mirror indication mode: Flip horizontal	●				
	S02	Mirror indication mode: Flip vertical	●				
	S03	Mirror indication mode: Flip horizontal and vertical	●				
MKC	S00	MASK OFF	●		MOD		
	S01	H RAMP (Slant 1) M	●		MOD	●	
	S02	H RAMP (Slant 4) M	●		MOD	●	
	S03	Slanting ramp M	●		MOD	●	
	S04	30 for aging	●		MOD	●	
	S05	05 for aging	●		MOD	●	
	S06	Afterimage wiping 1	●		MOD	●	
	S07	Afterimage wiping 2	●		MOD	●	
	S08	White (luminance change)	●		MOD	●	
	S09	Peak detection raster	●		MOD	●	
	S10	Address-lack check	●		MOD	●	
	S11	To scroll vertical green lines	●		MOD	●	
	S12	To scroll horizontal green lines	●		MOD	●	
	S13	To scroll vertical ramp vertically (white)	●		MOD	●	
	S14	To scroll vertical ramp vertically (green)	●		MOD	●	
	S15	To scroll horizontal ramp horizontally (white)	●		MOD	●	
	S16	To scroll horizontal ramp horizontally (green)	●		MOD	●	
S17	Crosshatch + Window	●		MOD	●		
MKS	S00	MASK OFF	●		MOD		
	S01	H RAMP (Slant 1)	●		MOD	●	
	S02	H RAMP (Slant 4)	●		MOD	●	
	S03	V RAMP (Slant 1)	●		MOD	●	
	S04	Slanting ramp	●		MOD	●	
	S05	Window (Hi= 870, Lo= 102)	●		MOD	●	
	S06	Window (Hi= 1023, Lo= 102)	●		MOD	●	
	S07	Window (Hi= 1023, Lo= 000)	●		MOD	●	
	S08	Window (Hi= 1023) 4%	●		MOD	●	
	S09	Window (Hi= 1023) 1.25%	●		MOD	●	
	S10	Window (1/7LINE)	●		MOD	●	
	S11	STRIPE (MGT/GRN)	●		MOD	●	
	S12	STRIPE (GRN/MGT)	●		MOD	●	
	S13	Checker in monochrome (1 line)	●		MOD	●	
	S14	Checker in monochrome (2 lines)	●		MOD	●	
	S15	Checker in monochrome (4 lines)	●		MOD	●	
	S16	Checker in monochrome (8 lines)	●		MOD	●	
	S17	COLOR BAR	●		MOD	●	
	S18	Slanting lines	●		MOD	●	
	S19	Checker in black and red (1 line)	●		MOD	●	
S20	Checker in black and red (2 lines)	●		MOD	●		

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
M							
MKS	S21	Checker in black and red (4 lines)	●		MOD	●	
	S22	Checker in black and red (8 lines)	●		MOD	●	
	S23	Afterimage wiping (RGB zigzag, V reverse)	●		MOD	●	
	S24	Black raster (maximum pulse count)	●		MOD	●	Change of the Peak Brightness Detection function (PKD) impossible
	S25	1 for perfect linear	●		MOD	●	
	S26	2 for perfect linear	●		MOD	●	
	S27	3 for perfect linear	●		MOD	●	
	S28	4 for perfect linear	●		MOD	●	
	S29	RGB checker 1	●		MOD	●	
	S30	RGB checker 2	●		MOD	●	
	S31	Window RED (RED= 1023)	●		MOD	●	
	S32	Window GREEN (GREEN= 1023)	●		MOD	●	
	S33	Window BLUE (BLUE= 1023)	●		MOD	●	
	S34	Horizontal stripes for even-numbered lines	●		MOD	●	
	S35	Horizontal stripes for odd-numbered lines	●		MOD	●	
	S36	Afterimage test 1	●		MOD	●	
	S37	Afterimage test 2	●		MOD	●	
	S38	Afterimage test 3	●		MOD	●	
	S39	Afterimage test 4	●		MOD	●	
	S40	Slanting ramp in Red only	●		MOD	●	
	S41	Slanting ramp in Green only	●		MOD	●	
	S42	Slanting ramp in Blue only	●		MOD	●	
	S43	1 for checking lighting of the display	●		MOD	●	
	S44	2 for checking lighting of the display	●		MOD	●	
	S45	5 for perfect linear	●		MOD	●	
	S46	6 for perfect linear	●		MOD	●	
	S47	7 for perfect linear	●		MOD	●	
	S48	8 for perfect linear	●		MOD	●	
	S49	Mask for ABL adjustment	●		MOD	●	
MKR	S00	MASK OFF	●		MOD		
	S01	Raster - White	●		MOD	●	
	S02	Raster - Red	●		MOD	●	
	S03	Raster - Green	●		MOD	●	
	S04	Raster - Blue	●		MOD	●	
	S05	Raster - Black	●		MOD	●	
	S06	Raster - Cyan	●		MOD	●	
	S07	Raster - Magenta	●		MOD	●	
	S08	Raster - Yellow	●		MOD	●	
	S09	Raster - Pink	●		MOD	●	
	S10	Raster - Yolk-colored	●		MOD	●	
	S11	Raster - Light blue	●		MOD	●	
	S12	Raster - Beige	●		MOD	●	
	S13	Raster - Yellow green	●		MOD	●	
	S14	Raster - Cyan 120	●		MOD	●	
	S15	Raster - Magenta 120	●		MOD	●	
	S16	Raster - Yellow 120	●		MOD	●	
	S17	Raster - Gray 120	●		MOD	●	
	S18	Raster - Red 626	●		MOD	●	
	S19	Raster - Green 626	●		MOD	●	
	S20	Raster - Blue 626	●		MOD	●	
	S21	Raster - Red 1023+	●		MOD	●	
	S22	Raster - Green 1023+	●		MOD	●	
	S23	Raster - Blue 1023+	●		MOD	●	
	S24	Raster - Green 225	●		MOD	●	
S25	Raster - Gray 307	●		MOD	●		

A

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D

E

F

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
N							
NGP	S00	Negative/positive inverse: OFF	●				
	S01	Negative/positive inverse: ON	●				
P							
PAV	S00	AV selection: FACTORY	●				
	S01	AV selection: STANDARD/PERFORMANCE	●				
	S02	AV selection: DYNAMIC	●				
	S03	AV selection: MOVIE	●				
	S04	AV selection: GAME	●				
	S05	AV selection: SPORTS	●				
	S06	AV selection: PURE	●				
	S07	AV selection: USER	●				
	S08	AV selection: isf-DAY	●				
	S09	AV selection: isf-NIGHT	●				
	S10	AV selection: OPTIMUM	●				
	S11	AV selection: isf-AUTO	●				
	S12	AV selection: Standar	●				
	S13	AV selection: Reserved (Australian standard)	●				
PBH	***	Panel white balance adjustment-Blue high-light	●		MOD	●	
PBL	***	Panel white balance adjustment-Blue low-light	●		MOD	●	
PBX	***	Panel Bx measurement value	●		MOD	●	
PBY	***	Panel By measurement value	●		MOD	●	
PCS	S00	Normal operation	●				
	S01	Catalog specifications operation	●				
PDM	S00	To enable power-down operation (To input a PD signal to the POWER SUPPLY Unit)	●				
	S01	To disable power-down operation (Not to input a PD signal to the POWER SUPPLY Unit)	●				
PES	S00	Common to displays for consumer use: Standard	●				
	S01	Common to displays for consumer use: Power-save 1	●				
	S02	Common to displays for consumer use: Power-save 2	●				
	S10	Domestic standard for displays for consumer use: Standard	●				
	S11	Domestic standard for displays for consumer use: Power-save 1	●				
	S12	Domestic standard for displays for consumer use: Power-save 2	●				
PFL	S**	Correction of luminance at the center of the screen	●				
	S00	Correction of luminance at the periphery of the screen: OFF	●				
	S01	Correction of luminance at the periphery of the screen: Fixed at ON	●				
	S02	Correction of luminance at the periphery of the screen: APL-interlocked to ON	●				
PFN		Panel module: Factory mode OFF	●			●	
PFS		Panel module: Factory-preset settings	●		MOD	●	
PFY		Panel module: Factory mode ON	●				Mask setting and MTB picture-quality settings remain the same.
PGB	S00	Blue gamma setting: Straight	●				
	S01	Blue gamma setting: Fixed at 1.6	●				
	S02	Blue gamma setting: Fixed at 1.7	●				
	S03	Blue gamma setting: Fixed at 1.8	●				
	S04	Blue gamma setting: Fixed at 1.9	●				
	S05	Blue gamma setting: Fixed at 2.0	●				
	S06	Blue gamma setting: Fixed at 2.1	●				
	S07	Blue gamma setting: Fixed at 2.2	●				
	S08	Blue gamma setting: Fixed at 2.3	●				
	S09	Blue gamma setting: Fixed at 2.4	●				
	S10-31	Blue gamma setting: Customized	●				
	PGG	S00	Green gamma setting: Straight	●			
S01		Green gamma setting: Fixed at 1.6	●				
S02		Green gamma setting: Fixed at 1.7	●				
S03		Green gamma setting: Fixed at 1.8	●				
S04		Green gamma setting: Fixed at 1.9	●				
S05		Green gamma setting: Fixed at 2.0	●				
S06		Green gamma setting: Fixed at 2.1	●				
S07		Green gamma setting: Fixed at 2.2	●				

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
P							
PGG	S08	Green gamma setting: Fixed at 2.3	●				
	S09	Green gamma setting: Fixed at 2.4	●				
	S10-31	Green gamma setting: Customized	●				
PGH	***	Panel white balance adjustment-Green high-light	●		MOD	●	
PGL	***	Panel white balance adjustment-Green low-light	●		MOD	●	
PGX	***	Panel Gx measurement value	●		MOD	●	
PGY	***	Panel GY measurement value	●		MOD	●	
PGR	S00	Red gamma setting: Straight	●				
	S01	Red gamma setting: Fixed at 1.6	●				
	S02	Red gamma setting: Fixed at 1.7	●				
	S03	Red gamma setting: Fixed at 1.8	●				
	S04	Red gamma setting: Fixed at 1.9	●				
	S05	Red gamma setting: Fixed at 2.0	●				
	S06	Red gamma setting: Fixed at 2.1	●				
	S07	Red gamma setting: Fixed at 2.2	●				
	S08	Red gamma setting: Fixed at 2.3	●				
	S09	Red gamma setting: Fixed at 2.4	●				
	S10-31	Red gamma setting: Customized	●				
PKD	S00	Peak Brightness Detection: OFF	●			●	
	S01	Peak Brightness Detection: ON	●			●	
PKL	S00	No brightness limitation: 100%	●				
	S01	Brightness limitation1: 87%	●				
	S02	Brightness limitation2: 73%	●				
	S03	Brightness limitation3: 60%	●				
	S04	Brightness limitation4: 52%	●				
	S05	Brightness limitation5: 40%	●				
	S06	Brightness limitation6: 27%	●				
	S07	Brightness limitation7: 13%	●				
PMT	S00	To cancel panel muting	●				
	S01	Panel muting	●				Muting cannot be performed while the built-in mask signal output is being displayed.
POF		To turn the unit OFF	●	●	PM		
PON		To turn the unit ON	●	●	PM		
PPT	S00	Panel Protection function: OFF	●			●	
	S01	Panel Protection function: ON	●			●	
PRH	***	Panel white balance adjustment-Red high-light	●		MOD	●	
PRL	***	Panel white balance adjustment-Red low-light	●		MOD	●	
PRX	***	Panel Rx measurement value	●		MOD	●	
PRY	***	Panel Ry measurement value	●		MOD	●	
Q							
QAJ		To acquire various adjustment values	●				
QAL		To acquire the NG (SD) history managed by the Panel Main microcomputer		●			
QPB		To acquire various data managed by the Panel Main microcomputer		●			
QPD		To acquire the history of power-down places	●				
QPM		To acquire pulse-meter data	●				
QPW		To acquire white balance adjustment data of the panel	●				
QPF		To acquire characteristics/function settings data of the panel	●				
QS1		To acquire panel information, such as software versions	●				
QS2		To acquire panel status data, such as acquired temperatures of the panel in cases of operation changes	●				
QS3		To acquire panel information other than the above	●				
QS5		To acquire panel information (Individual functions)	●				
QSB		To acquire versions of various microcomputers of the panel main unit		●			
QSP		To acquire subversions of various microcomputers of the panel	●				
QSD		To acquire shutdown data	●				
QSI		To acquire signal-related data	●				

A

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
R							
R1K	***	First reset (wedge width)	●		MOD	●	
R2K	***	Second reset (wedge width)	●		MOD	●	
RBL	S00-7	Correction of panel deterioration, Blue level 0 to 7	●		MOD	●	For enabling changed setting, it is necessary to turn the unit off then back on again.
RGL	S00-7	Correction of panel deterioration, Green level 0 to 7	●		MOD	●	
RLS	S00	Room light sensor operation: OFF	●				
	S01-5	Room light sensor operation: 1 to 5	●				
RRL	S00-7	Correction of panel deterioration, Red level 0 to 7	●		MOD	●	For enabling changed setting, it is necessary to turn the unit off then back on again.
S							
SAT	***	Timing adjustment between the scan and address	●		MOD	●	
SCW	S00	Normal operation	●				
	S01	Warning, depiction in the blue window (left)	●				
	S02	Warning, depiction in the red window (right)	●				
SDM	S00	To enable shutdown operation	●				
	S01	To disable shutdown operation	●				
SFR	S01-8	Measurement against AM radio noise: Patterns 1 to 8	●		MOD	●	For enabling changed setting, it is necessary to turn the unit off then back on again.
SKM	S00	Streaking Correction mode: OFF	●		MOD	●	
	S01-8	Streaking Correction mode: 1 to 8	●		MOD	●	
SMC	S00	Smooth clear driving: OFF	●			●	
	S01	Smooth clear driving: ON	●			●	
SN0	***	Serial No. setting 0 (Panel)	●		MOD	●	
SN1	***	Serial No. setting 1 (Panel)	●		MOD	●	
SN2	***	Serial No. setting 2 (Panel)	●		MOD	●	
SN3	***	Serial No. setting 3 (Panel)	●		MOD	●	
SN4	***	Serial No. setting 4 (Panel)	●		MOD	●	
SQM	S01	VIDEO sequence setting	●				
	S02	PC sequence setting	●				
	S03	Retake sequence setting	●				
SSM	S00	SSCG OFF	●			●	
	S01	SSCG ON	●			●	
SWA	***	Estimate value for the color of the light source (absolute value)	●				
SWF	S00	Reflection of estimate value for the color of the light source: OFF	●				
	S01	Reflection of estimate value for the color of the light source: ON	●				
SWR	***	Estimate value for the color of the light source (relative value)	●				
SYS	S00	Disabling monitoring of system cable disconnection (Standalone Operation)		●	PM		Effective only for the RS-232C connector on the panel
	S01	Enabling monitoring of system cable disconnection (System Operation)		●	PM		Effective only for the RS-232C connector on the panel
T							
THS	S00	Interlocked operation of the theater port: OFF	●				
	S01	Interlocked operation of the theater port: ON	●				
U							
UAJ		To set the flag for DIGITAL Assy adjustment to "Not adjusted"	●		MOD	●	
V							
V1F	***	To adjust the reference value for Vyknofs 1 and 2 voltages	●		MOD	●	
V3F	***	To adjust the reference value for Vyknofs 3 voltage	●		MOD	●	
V4F	***	To adjust the reference value for Vyknofs 4 voltage	●		MOD	●	
VFQ	S02	To set the frequency during mask display to VD-50 Hz	●		MOD	●	
	S03	To set the frequency during mask display to VD-60 Hz	●		MOD	●	
	S05	To set the frequency during mask display to VD-72 Hz	●		MOD	●	
	S06	To set the frequency during mask display to VD-75 Hz-1	●		MOD	●	
	S07	To set the frequency during mask display to VD-75 Hz-2	●		MOD	●	
	S13	To set the frequency during mask display to PC-60 Hz	●		MOD	●	
VOF	***	To adjust the reference value for Vysnofs voltage	●		MOD	●	
VRP	***	To adjust the reference value for Vyprst voltage	●		MOD	●	
VSU	***	To adjust the reference value for Vsus voltage	●		MOD	●	
VX1	***	To adjust the reference value for Vxpofs1 voltage	●		MOD	●	
VX2	***	To adjust the reference value for Vxpofs2 voltage	●		MOD	●	
VYF	***	To adjust the reference value for ΔVyknofs1,2/3/4 voltages	●		MOD	●	

A

Command		Function	Command Receiving UCOM		Last Memory	Effective only during FAY	Remarks
			MOD	PM			
W							
WBI	S00	Panel WB standard output mode: OFF	●			●	
	S01	Panel WB standard output mode: ON	●			●	
X							
X1B	***	3SF and after to First X SUS (oscillation increase amount)	●		MOD	●	
X3B	***	2SF to Third X SUS (oscillation increase amount)	●		MOD	●	
XSB	***	2SF to Repetition X SUS (oscillation increase amount)	●		MOD	●	
Y							
Y1K	***	1SF to Y SUSTAIL (wedge width)	●		MOD	●	
Y1Z	***	1SF to Y SUSTAIL (oscillation decrease amount)	●		MOD	●	
Y2B	***	2SF to Second Y SUS (oscillation increase amount)	●		MOD	●	
Y2K	***	2SF to Y SUSTAIL (wedge width)	●		MOD	●	
Y2Z	***	2SF to Y SUSTAIL (oscillation decrease amount)	●		MOD	●	
YNK	***	3SF and after (2-pulse SSF) to Y SUSTAIL (wedge width)	●		MOD	●	
YTK	***	3SF and after to Y SUSTAIL (wedge width)	●		MOD	●	
YTZ	***	3SF and after to Y SUSTAIL (oscillation decrease amount)	●		MOD	●	
YSB	***	2SF to Repetition Y SUS (oscillation increase amount)	●		MOD	●	

C

D

E

F

A [1] QS1 (PANEL STATUS)
Model information and version information are returned.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Every Time	Output of status	Return data: 3 (ECO) + 112 (DATA) + 2 (CS) = 117 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS1
1	Resolution/Size	1 byte	F
2	Panel Generation	1 byte	9
3	Destination	1 byte	*
4	Grade	1 byte	*
5	Panel Product Form	1 byte	A
6	Boot version of Module microcomputer	3 byte	-01A
7	Program version of Module microcomputer	8 byte	-01A ' ' ' '
8	Boot version of sequence processor	3 byte	-01Z
9	Program version of sequence processor	8 byte	-01Z ' ' ' '
10	Panel information	8 byte	G9_50F_2
11	Derivative operation identification	1 byte	*
12	Reserved (panel section)	7 byte	*****
13	, (comma)	1 byte	,
14	MTB generation	1 byte	9
15	MTB destination	1 byte	A
16	MTB grade	1 byte	H
17	MTB product form	1 byte	B
18	Program version of IF microcomputer	8 byte	-01A
19	Boot version of IF microcomputer	4 byte	01A
20	Program version of Main microcomputer	8 byte	-01A
21	Boot version of Main microcomputer	4 byte	01A
22	Common version of ASIC	8 byte	-01A
23	Boot version of ASIC	8 byte	01A
24	PRS version of ASIC	8 byte	-01A
25	PIC version of ASIC	8 byte	-01A
26	Common version of the Digital Tuner	8 byte	-0A
27	Boot version of the Digital Tuner	4 byte	01A
CS	2 Byte	2 byte	4A

11: Derivative Operation Identification	
*	Standard model operation
1	Derivative model operation

14: MTB Generation	
9	G9

15: MTB Destination	
A	North America
C	China
E	Europe
G	General
J	Japan
U	Australia

16: MTB Grade	
H	Elite/One body Europe HD /System Europe HD/One body Australia
T	Regular/One body Europe SD
D	Derivative Model
*	No Grade (Japan/General/China)

17: MTB Product Form	
B	One body model
S	System model

1: Resolution/Size	
F	50-FHD (1920*1080)
G	60-FHD (1920*1080)

2: Panel Generation	
9	G9

3: Destination	
*	Commonness

4: Grade	
*	Commonness
Z	Evaluation

5: Not used	
A	"A" fixed

10: Panel Information (8 Byte)		
1 to 2nd byte	G9	Generation information
4 to 5th byte	50	50 inch
	60	60 inch
6th byte	F	FHD
8th byte	3	50 inch 2nd PLANT (Reserved)
	2	50 inch 2nd PLANT
	1	50 inch 1st PLANT
	'	Others

' = space

[2] QS2 (PANEL OPERATION DATA)

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	Every Time	Output of status	Return data: 3 (ECO) + 34 (DATA) + 2 (CS) = 39 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS2
1	Notify of the standby operation transition	1 byte	1
2	Adjustment flag of the main unit	1 byte	0
3	Adjustment-data backup flag	1 byte	0
4	"1st PD" data	1 byte	0
5	"2nd PD" data	1 byte	0
6	Color sensor data	1 byte	0
7	Reserved	2 byte	**
8	Temperature data (TEMP 1)	3 byte	128
9	SD data	1 byte	0
10	SD subcategory data	1 byte	0
11	Operation status induced by SD	1 byte	0
12	Reserved	3 byte	***
13	HOUR METER	8 byte	00000259
14	MASK indication	1 byte	0
15	Still picture detection	1 byte	0
16	SCAN protection detection	1 byte	0
17	Panel crack detection	1 byte	0
18	Address emergency detection	1 byte	0
19	Reserved	4 byte	****
CS	2 Byte	2 byte	4A

1: Power supply status

P	During power ON
0	Shifting to Passive Standby is not possible.
1	Shifting to Passive Standby is possible.

2: Adjustment flag of the main unit

0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup flag

0	Adjustment completed
1	Adjustment not completed

4, 5: PD data

0	No PD data
2	POWER
3	SCAN
4	SCN-5V
6	Y-DCDC
7	Y-SUS
8	ADRS
A	X-DCDC
B	X-SUS
C	DIG-DCDC
F	UNKNOWN

6: Color sensor data

-	Function OFF (including standby)
0	Normal
1	Hardware connection is not completed
2	Data mismatching

9: SD data

0	No SD
1	SQ_LSI
2	MDU-DEVICE
3	RST2
4	Panel temperature

10-1: SD subcategory (SQ_LSI)

0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (H/M)
6	Version mismatching (H/I)

10-2: SD subcategory (MDU-DEVICE)

0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

10-3: SD subcategory (Panel temperature)

0	No SD-Sub data
1	Panel high temperature
2	Panel low temperature

11: Operation status induced by SD

0	Normal
1	Relay-off completed
2	During warning indication

14: MASK indication

0	MASK-OFF
1	MASK-ON

15 to 18: Detection of Each Protection function

0	Normal operation
1	At detection of protection operation

[3] QS3 (OTHER DATA ON THE PANEL)

The command QS3 is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QS3]	Every Time	Output of status	Return data: 3 (ECO) + 58 (DATA) + 2 (CS) = 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS3
1	SERIAL	15 byte	-----
2	HOUR METER	8 byte	00000000
3	TOTAL HR METER	8 byte	00000000
4	PON COUNTER	8 byte	00000000
5	Panel temperature (*1)	5 byte	23.5
6	Reserved (TEMP0 acquisition)	5 byte	-----
7	MAX panel temperature history (*1)	5 byte	78.3
8	Reserved	4 byte	****
CS	2 Byte	2 byte	94

Note
(*1) : Centigrade scale

[4] QS5 (COLOR SENSOR DATA)

The command QS5 is for acquiring the color sensor information.

Command Format	Effective Operation Modes	Function	Remarks
[QS5]	Every Time	Output of status	Return data: 3 (ECO) + 45 (DATA) + 2 (CS) = 50 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS5
1	Color sensor data (Note)	1 byte	2
2	RED data of color sensor	4 byte	0425
3	GREEN data of color sensor	4 byte	2112
4	BLUE data of color sensor	4 byte	5000
5	Reserved	32 byte	** to **
CS	2 Byte	2 byte	94

Note: The color sensor data is output as the same data as QS2.

[5] QSP (SUB VERSION OF THE PANEL SECTION)

The command QSP is for acquiring sub version data on software of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QSP]	Every Time	Output of status	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSP
1	MDUcom-PRG	8 byte	=01Y
2	MDUcom-DATA_TBL	8 byte	=01Y ''''
3	SQ_LSI-PRG	4 byte	=01Y
4	SQ_LSI-PIC_TBL	8 byte	=01Y ''''
5	SQ_LSI-SEQ_DATA	4 byte	=01Y
6	Reserved	8 byte	*****
CS	2 Byte	2 byte	A3

[6] QAJ (PANEL ADJUSTMENT DATA)

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	Every Time	Output of status	Return data: 3 (ECO) + 84 (DATA) + 2 (CS) = 89 Byte

Data Arrangement	Data Length	Output Example
ECO	3 byte	QAJ
1 Vsus adjustment value	3 byte	128
2 Vysnfs adjustment value	3 byte	128
3 Vyprst adjustment value	3 byte	128
4 Vxpofs1 adjustment value	3 byte	128
5 Vxpofs2 adjustment value	3 byte	128
6 Vyknofs1,2 adjustment value	3 byte	128
7 Vyknofs3 adjustment value	3 byte	128
8 Vyknofs4 adjustment value	3 byte	128
9 Δ Vyknofs1,2/3/4 adjustment value	3 byte	128
10 Reserved	6 byte	*****
11 R1K adjustment value	3 byte	128
12 R2K adjustment value	3 byte	128
13 Y1K adjustment value	3 byte	128
14 Y1Z adjustment value	3 byte	128
15 X1B adjustment value	3 byte	128
16 Y2B adjustment value	3 byte	128
17 X3B adjustment value	3 byte	128
18 YSB adjustment value	3 byte	128
19 XSB adjustment value	3 byte	128
20 YTK adjustment value	3 byte	128
21 YTZ adjustment value	3 byte	128
22 Y2K adjustment value	3 byte	128
23 Y2Z adjustment value	3 byte	128
24 YNK adjustment value	3 byte	128
25 SAT adjustment value	3 byte	128
26 Reserved	3 byte	***
27 AM radio countermeasure	1 byte	1
28 Reserved	2 byte	**
CS 2 Byte	2 byte	B7

27: AM radio countermeasure	
n	n: 1 to 8 (SUS frequency n)

[7] QPW (VIDEO ADJUSTMENT DATA OF THE PANEL)

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	Every Time	Output of status	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement		Data Length	Output Example	1: Type of Drive sequence		11, 12, 13: RGB Gamma setting		15: Center luminance correction		17: Interlocked with APL		18: Transition of protective operations	
ECO		3 byte	QPW	50VS	Video 50 Hz	n	00 to 31	0	OFF	0	OFF	0	Upper limit state for brightness
1	Type of drive sequence (Note 1)	4 byte	60VS	60VS	Video 60 Hz			1	ON	1	ON	1	Brightness being reduced
2	ABL adjustment table	1 byte	1	72VS	Video 72 Hz			2	ON (interlocked with APL)	2	WB interlocked ON/ γ OFF	2	Lower limit state for brightness
3	Type of WB adjustment table (Note 1)	1 byte	1	75V1	Video 75-1 Hz					3	WB interlocked OFF/ γ ON	3	Brightness being increased
4	ABL adjustment value	3 byte	128	75V2	Video 75-2 Hz								
5	R-HIGH adjustment value	3 byte	256	60PS	PC 60 Hz								
6	G-HIGH adjustment value	3 byte	256	2: ABL adjustment table									
7	B-HIGH adjustment value	3 byte	256	n	n: 1 to 3								
8	R-LOW adjustment value	3 byte	512	3: Type of WB adjustment table									
9	G-LOW adjustment value	3 byte	512	n	n: 1 to 4								
10	B-LOW adjustment value	3 byte	512										
11	R gamma setting	2 byte	31										
12	G gamma setting	2 byte	10										
13	B gamma setting	2 byte	10										
14	Streaking correction	1 byte	1										
15	Center luminance correction	1 byte	0										
16	Reserved	1 byte	*										
17	Interlocked with APL	1 byte	0										
18	Transition of protective operations	1 byte	0										
19	Reserved	2 byte	**										
CS	2 Byte	2 byte	37										

Note 1: The "75 Hz-2" Drive Sequence type signals and WB Adjustment Table 4 are output only when "75 Hz-2" (VFQS07) is selected for internal signals (mask signals).
When external signals are selected and the Drive Sequence type is 75 Hz, "75 Hz-1" is output because "75 Hz-1" and "75 Hz-2" are not distinguished for external signals.

[8] QPF (FUNCTION OF THE PANEL)

The command QPF is for acquiring the characteristic and the function setting value of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPF]	Every Time	Output of status	Return data: 3 (ECO) + 69 (DATA) + 2 (CS) = 74 Byte

Data Arrangement	Data Length	Output Example
ECO	3 byte	QPF
1 R-REVISE setting value	1 byte	0
2 G-REVISE setting value	1 byte	0
3 B-REVISE setting value	1 byte	0
4 Reserved	3 byte	***
5 ADDRESS L1,L2 setting value	2 byte	01
6 ADDRESS L3,L4 setting value	2 byte	13
7 ADDRESS U1,U2 setting value	2 byte	32
8 ADDRESS U3,U4 setting value	2 byte	30
9 Reserved	4 byte	****
10 Streaking correction	1 byte	1
11 Full-screen black display mode	1 byte	1
12 Reserved	4 byte	****
13 PANEL RX	3 byte	512
14 PANEL RY	3 byte	512
15 PANEL GX	3 byte	512
16 PANEL GY	3 byte	512
17 PANEL BX	3 byte	512
18 PANEL BY	3 byte	512
19 Reserved	6 byte	*****
20 Color sensor R coefficient	3 byte	***
21 Color sensor G coefficient	3 byte	***
22 Color sensor B coefficient	3 byte	***
23 Reserved	12 byte	** to **
CS 2 Byte	2 byte	37

1: 2: 3: RGB-REVISE setting value

n	n: 0 to 7 (Level n)
---	---------------------

5 to 8: ADDRESS α , β setting

nm	n: 0 to 9 (Address α setting PHASE n)
m	m: 0 to 9 (Address β setting PHASE m)

10: Streaking correction

0	OFF
n	n: 1 to 8 (Mode n)

11: Full-screen black display mode

0	OFF (In-phase SUS drive prohibition)
1	MODE1 (In-phase SUS drive permission)

[9] QPM (PULSE METER VALUE)

The command QPM is for acquiring the accumulated pulse count.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	Every Time	Output of status	Return data: 3 (ECO) + 40 (DATA) + 2 (CS) = 45 Byte

Data Arrangement	Data Length	Output Example
ECO	3 byte	QPM
1 Pulse meter B 1	8 byte	00000000
2 Pulse meter B 2	8 byte	00000000
3 Pulse meter B 3	8 byte	00000000
4 Pulse meter B 4	8 byte	00000000
5 Pulse meter B 5	8 byte	00000000
CS 2 Byte	2 byte	E7

Note:

The minimum for a returned value of the pulse meter for each block (B1-B2) is one million.

[10] QPD (POWER DOWN LOGS)

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	Every Time	Output of status	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QPD
1	Latest "1st PD" data	1 byte	A
2	Latest "2nd PD" data	1 byte	2
3	Data from the hour meter for the latest PD	8 byte	00010020
4	Second latest "1st PD" data	1 byte	E
5	Second latest "2nd PD" data	1 byte	9
6	Data from the hour meter for the second latest PD	8 byte	00008523
7	Third latest "1st PD" data	1 byte	4
8	Third latest "2nd PD" data	1 byte	3
9	Data from the hour meter for the third latest PD	8 byte	00004335
10	Fourth latest "1st PD" data	1 byte	2
11	Fourth latest "2nd PD" data	1 byte	0
12	Data from the hour meter for the fourth latest PD	8 byte	00000945
13	Fifth latest "1st PD" data	1 byte	4
14	Fifth latest "2nd PD" data	1 byte	0
15	Data from the hour meter for the fifth latest PD	8 byte	00000715
16	Sixth latest "1st PD" data	1 byte	A
17	Sixth latest "2nd PD" data	1 byte	2
18	Data from the hour meter for the sixth latest PD	8 byte	00000552
19	Seventh latest "1st PD" data	1 byte	A
20	Seventh latest "2nd PD" data	1 byte	0
21	Data from the hour meter for the seventh latest PD	8 byte	00000213
22	Eighth latest "1st PD" data	1 byte	D
23	Eighth latest "2nd PD" data	1 byte	0
24	Data from the hour meter for the eighth latest PD	8 byte	000001A7
CS		2 byte	27

• PD data	
0	No PD
2	P-POWER
3	SCAN
4	SCN-5V
6	Y-DCDC
7	Y-SUS
8	Address
A	X-DCDC
B	X-SUS
C	DIGI-DCDC
F	UNKNOWN

[11] QSD (SHUTDOWN LOGS of the Panel Section)

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs of the panel section.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	Every Time	Output of status	Return data: 3 (ECO) + 80 (DATA) + 2 (CS) = 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSD
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the hour meter for the latest SD	8 byte	00752013
4	Second latest SD data	1 byte	5
5	Second latest SD subcategory data	1 byte	0
6	Data from the hour meter for the second latest SD	8 byte	00495204
7	Third latest SD data	1 byte	2
8	Third latest SD subcategory data	1 byte	3
9	Data from the hour meter for the third latest SD	8 byte	00100355
10	Fourth latest SD data	1 byte	2
11	Fourth latest SD subcategory data	1 byte	5
12	Data from the hour meter for the fourth latest SD	8 byte	00075620
13	Fifth latest SD data	1 byte	1
14	Fifth latest SD subcategory data	1 byte	0
15	Data from the hour meter for the fifth latest SD	8 byte	00000852
16	Sixth latest SD data	1 byte	2
17	Sixth latest SD subcategory data	1 byte	2
18	Data from the hour meter for the sixth latest SD	8 byte	00000451
19	Seventh latest SD data	1 byte	0
20	Seventh latest SD subcategory data	1 byte	0
21	Data from the hour meter for the seventh latest SD	8 byte	00000000
22	Eighth latest SD data	1 byte	0
23	Eighth latest SD subcategory data	1 byte	0
24	Data from the hour meter for the eighth latest SD	8 byte	00000000
CS	2 Byte	2 Byte	7D

• SD data

0	No SD
1	SQ_LSI
2	MDU-DEVICE
3	RST2
4	Panel temperature

• SD subcategory (SQ_LSI)

0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
4	Version mismatching (H/S)
5	Version mismatching (H/M)
6	Version mismatching (H/I)

• SD subcategory (MDU-DEVICE)

0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

• SD subcategory (Panel temperature)

0	No SD-Sub data
1	TEMP1 (high temperature)
2	TEMP1 (low temperature)

[12] QSI (INPUT SIGNAL DATA)

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	Every Time	Output of status	Return data: 3 (ECO) + 66 (DATA) + 2 (CS) = 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence (Note)	4 Byte	60VS
2	Type of ABL adjustment table (Note)	1 Byte	1
3	Type of WB adjustment table (Note)	1 Byte	1
4	Reserved	4 Byte	****
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Reserved	4 Byte	****
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	V frequency distinction	4 Byte	6002
14	Reserved	4 Byte	****
15	APL acquiring data	4 Byte	1023
16	Number of SUS pulses	4 Byte	0457
17	Detection status of still picture	1 Byte	1
18	Detection status of cracking in the panel	1 Byte	1
19	Detection status of SCAN protection	1 Byte	1
20	Detection status of external protection	1 Byte	1
21	Transition of protection operations	1 Byte	0
22	Address emergency status	1 Byte	1
23	Detection status of reset operation	1 Byte	1
24	In-phase SUS mode status	1 Byte	1
25	Reserved	1 Byte	1
CS	2 Byte	2 Byte	27

18 to 20: Each protection function

0	Setting: OFF
1	Setting: ON (during wait)
2	Setting: ON (during operation)

21: Transition of protection operations

0	Upper limit status for brightness
1	Brightness being reduced
2	Lower limit status for brightness
3	Brightness being increased

22: Address emergency status

0	Normal status
1	Emergency status

23: Reset operation status

A	All reset operation
2	Interlace 1/2 reset operation
4	Interlace 1/4 reset operation
L	Reset less operation (specifications operation)

24: In-phase SUS mode status

0	Normal status
1	In-phase SUS mode status
2	Assist status at the cancellation

Note: The types of drive sequence and ABL/WB table are output as the same data as QPW.

[13] DRV (PANEL DRIVE-POWER ON/OFF)

Panel drive-power ON/OFF (drive ON/OFF) is controllable.

Command Format	Operation		Remarks
	Effective Operation Modes	Function	
[DRV+S00]	Every time	DRIVE OFF	If a command is issued in Standby mode, and the unit is left unoperated for more than 10 seconds, the command will become void.
[DRV+S01]	Every time	DRIVE ON (default)	

Note: The function of the DRIVE OFF key on the remote control unit for servicing is the same as that of the DRVS00 command.
(A function equivalent to that of the DRVS01 command is not provided for the remote control unit for servicing.)

[14] FAY/FAN (ADJUSTMENT COMMANDS PERMISSION/PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section "6.1 [3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE" of the Service Manual for Media Receiver (KRP-M01).
[FAN]	During FAY	Adjustment command is invalid.	

[15] FAJ/UAJ/CBU/BCP (BACKUP FUNCTION FOR ADJUSTMENT VALUE)

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAJ]	During FAY	To make the status of the EEPROM on the DIGITAL Assy "adjustment completed" and copy the data to the EEPROM for backup	This takes at least 350 msec.
[UAJ]		To make the status of the EEPROM on the DIGITAL Assy "adjustment not completed"	Only the status is changed, and the real data are not erased.
[CBU]		To make the status of the EEPROM on for backup "adjustment not completed"	Only the status is changed, and the real data are not erased. However, if the status of the EEPROM on the DIGITAL Assy is "adjustment completed," the data in the EEPROM of the DIGITAL Assy will be copied to the EEPROM for backup upon POF.
[BCP]		To copy the backup data from the EEPROM for backup to the EEPROM on the DIGITAL Assy	

[16] QSB

Data on models and versions of the Module microcomputer and Panel Main microcomputer can be acquired.

Command Format	Effective status	Function	Remarks
[QSB]	Every time	To acquire versions of various programs managed by the Panel Main and Module microcomputers	Return data: 3 (ECO) + 87 (DATA) + 2 (CS) = 92 Byte

Data Arrangement			Data Length	Output Example	Remarks
ECO	Echo back		3	"QSB"	
1	Data managed by the Module microcomputer	Display data 1 (resolution, size)	1	F	See QS1.
2		Display data 2 (generation)	1	9	See QS1.
3		Display data 3 (destination)	1	*	See QS1.
4		Display data 4 (grade)	1	*	See QS1.
5		Display data 5 (product style)	1	A	See QS1.
6		Boot version of the Module microcomputer	3	01A	See QS1.
7		Program version of the Module microcomputer (common program of the MD microcomputer)	8	001A ‘ ’ ’ ’	See QS1.
8		Boot version of the later ASIC (SQ_LSI Boot)	3	01H	See QS1.
9		Program version of the later ASIC (common program of the SQ_LSI)	8	001Y ‘ ’ ’ ’	See QS1.
10		PANEL INFO	8	G9_50F_2	See QS1.
11		Reserved	8		(All digits are padded with asterisks.)
12	Data managed by the Panel Main microcomputer	Delimiter	1	" , "	
13		Dummy	4	"*****"	
14		Version data of the Panel Main microcomputer	3	– 01	Version of the program
			1	A	A (fixed)
			1	S	S (fixed)
			3	Space	Reserved for the version of the program
			1	Space	Reserved for the version of the boot program
			3	07A	Version of the boot program
15		Model data (Bezel color data, etc.)	1	1	1: R1 (ROM Table 1, 2: R2 (ROM Table 2), 3: R3 (ROM Table 3), E: EP (For use by engineers)
16		Firmware version data of the Displayport_Rx	16	1.10	Version of the program
17		Firmware version data of the Displayport_Rx	4	0C15	Version of hardware
18		Reserved	6		"Space"
CS	Check sum		2	(CS)	

[17] QPB (Panel Main Operation Information)

Data on operation of the display main unit can be acquired.

Command Format	Effective status	Function	Remarks
[QPB]	Every time	To acquire data on current statuses managed by the Panel Main microcomputer	Return data: 3 (ECO) + 53 (DATA) + 2 (CS) = 58 Byte

Data Arrangement		Data Length	Output Example	Remarks
ECO	Echo back	3	"QPB"	
1	Data on panel temperature	5	*****	Temperature of the panel (in Centigrade) (Tmd)
2	Delimiter	1	","	Comma
3	Unit temperature data 1	5	*****	Temperature inside the unit (in Centigrade) (T1)
4	Delimiter	1	","	Comma
5	Unit temperature data 2 (reserved)	5	*****	Temperature inside the unit (in Centigrade) (T2) (Reserved, All digits are padded with asterisks.)
6	Delimiter	1	","	Comma
7	Unit temperature data 3 (reserved)	5	*****	Temperature inside the unit (in Centigrade) (T3) (Reserved, All digits are padded with asterisks.)
8	Delimiter	1	","	Comma
9	Fan rotation speed A	1	A	Fan setting A (S: stop, L: Low, H: High, and A: Auto)
10	Fan control A/D value (A)	3	***	Fan control D/A value, A, decimal code
11	Fan rotation speed B	1	A	Fan setting B (S: stop, L: Low, H: High, and A: Auto)
12	Fan control A/D value (B)	3	***	Fan control D/A value, B, decimal code
13	Room Light Sensor level	1	5	0-7, padded with an asterisk during the sensor is off
14	Room Light Sensor A/D value	4	****	Brightness sensor A/D value, decimal code
15	Dummy 1	2	**	All digits are padded with asterisks.
16	System Operation mode of the panel	1	S	S: System Operation mode, T: Standalone Operation mode
17	Dummy 2	2	**	All digits are padded with asterisks.
18	Audio muting	1	0	0: Canceling muting, 1: Muting
19	Reserved	10	**	All digits are padded with asterisks.
CS	Check sum	2	(CS)	

[18] QAL (Shutdown information for the display main unit)

Up to the 8 latest shutdown logs of the display main unit can be acquired.

Command Format	Effective status	Function	Remarks
[QAL]	Every time	To acquire up to the 8 latest shutdown logs managed by the Panel Main microcomputer	Return data: 3 (ECO) + 96 (DATA) + 2 (CS) = 101 Byte

Data Arrangement		Data Length	Output Example	Remarks
ECO	Echo back	3	"QAL"	
1	Data on the latest shutdown	12		Reasons of the latest 8 shutdowns and hour-meter data when the shutdowns were generated (For details, see the tables below.)
2	Data on the 2nd latest shutdown	12		
3	Data on the 3rd latest shutdown	12		
4	Data on the 4th latest shutdown	12		
5	Data on the 5th latest shutdown	12		
6	Data on the 6th latest shutdown	12		
7	Data on the 7th latest shutdown	12		
8	Data on the 8th latest shutdown	12		
CS	Check sum	2	(CS)	

■ Shutdown (SD) data

Order	Content	Length (BYTE)	Value	Remarks
1	SD category data	1		SD category (For details, see the table below.) 0 for no SD
2	SD subcategory data	1		SD subcategory (For details, see the table below.)
3	HOUR METER	7		Time when a shutdown managed by the Panel Main microcomputer was generated All digits are padded with asterisks when there was no SD.
4	Dummy	3		All digits are padded with asterisks.

■ SD categories/SD subcategories

SD category (response)	Reason for SD	w/wo subcategory	SD subcategory (response)	Reason for subcategory
"0"	No SD (no abnormality)	Without subcategory	"0"	
"5"	Shutdown signal from D-Amp. Short-circuit of speaker terminal.	With subcategory	"1"	A_NG_B : L
			"2"	OTW : L
"6"	Failure in module microcomputer communication	Without subcategory	"0"	
"8"	Failure in IIC communication	With subcategory	"1"	Displayport receiver
			"2"	Failure in AUDIO PWM IC communication
"A"	FAN stop	With subcategory	"1"	FAN_A stop
			"2"	FAN_B stop
"B"	Abnormal temperature of the display unit (high)	With subcategory	"1"	High temperature at Temperature Sensor 1
			"2"	High temperature at Temperature Sensor 2
"D"	Abnormality in power of the Display MAIN Assy	With subcategory	"1"	Abnormality in 6.5V power supply.

6. SERVICE FACTORY MODE

6.1 DETAILS OF THE FACTORY MENU

A

The Factory menu will be displayed only when the Media Receiver is connected. For details on how to enter Factory menu, refer to “6.1 DETAILS OF THE FACTORY MENU” in the service manual for the Media Receiver.

■

[1] PANEL FACT.

■

Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

B

No.	Indication	Description of functions
[1-1]	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of EEPROM for adjustment values for the main unit and for backup, are displayed.
[1-2]	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
[1-3]	POWER DOWN	The power-down history is displayed.
[1-4]	SHUT DOWN	The shutdown history of the panel section is displayed.
[1-5]	PANEL-1 ADJ (+)	Settings of the driving voltage and AM radio prevention can be performed.
[1-6]	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
[1-7]	PANEL FUNCTION (+)	Setting of the panel-degradation correction-level and various functions are displayed.
[1-8]	ETC. (+)	Copying of backup data, clearing of various settings, and changing of settings for functions for which setting data are not stored upon last update are performed.
[1-9]	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
[1-10]	PATTERN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
[1-11]	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

C

D

E

F

■ Details of indications in each layer

[1-1] PANEL INFORMATION

- Data, such as the version of the microcomputer of the panel, product serial number, and statuses of digital EEPROM for storing the adjustment values and for backup EEPROM, are displayed. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA1	PANEL	INFORMATION						
2		MODULE		-01A			01A		
3		-PRG		-01A					
4		-DAT		-01A					
5		SEQ PRS		-01Y			02A		
6		-PRQ		-01Y					
7		-PIC		-01Y					
8		-SEQ		520Y					
9									
A		SERIAL							
B		DIG.EEP		ADJUSTED					
C		BACKUP		NO DATA!					
D									
E									

■ Key operation

- <DOWN> : Shifting to PANEL WORKS
 <UP> : Shifting to COMBI MASK SETUP
 (+)
 <L/R> : Updating displayed information

■ Contents of the Display item

- MODULE : The version of data written in the Module microcomputer is indicated.
 -PRG : The program version of the Module microcomputer is indicated.
 -DAT : The data version of the Module microcomputer is indicated.
 SEQ PRS : The version of data written in the Sequence LSI is indicated.
 -PRG : The program version of the Sequence LSI is indicated.
 -PIC : The Picture-data version of the Sequence LSI is indicated.
 -SEQ : The sequence-data version of the Sequence LSI is indicated.
 SERIAL : The serial number of the module is indicated.
 DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
 BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

[1-2] PANEL WORKS

- Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are displayed. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA1	PANEL	WORKS						
2									
3		PM-B1		00000715	M				
4		PM-B2		00000607	M				
5		PM-B3		00000852	M				
6		PM-B4		00000668	M				
7		PM-B5		00000733	M				
8									
9		HR-MTR		000025H	20M				
A		P-COUNT		00000095	TIMES				
B		TEMP1		+27.4	/ +70.8				
C		CLS-RGB		2000/0325	/ 1223-OK				
D									
E									

■ Key operation

- <DOWN> : Shifting to POWER DOWN
 <UP> : Shifting to PANEL INFORMATION
 <L/R> : Updating displayed information

← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

- PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
- HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
- P-COUNT: The accumulated power-on count is indicated.
- TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated. The temperature unit is " °C (Centigrade) ".
- CLS-RGB: Data obtained from the color sensor are displayed in the order R, G, and B, with the status indication at the end.

CLS Status	OSD Indication
Function OFF	-OFF
Color sensor module non connection	-NC
Data abnormality	-INV
Data normal	-OK

Note:

Neither the color sensor value nor the status indication will be displayed if the color sensor function is set to ON in the ETC (+) layer beforehand.

A

[1-3] POWER DOWN

- The power-down history is displayed. No other layers are nested below this layer.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA 1	POWER	DOWN						
2		1ST		2ND		000124H	23M		
3									
4	1	X-DCDC				000124H	21M		
5	2	Y-SUS	SCAN			000115H	05M		
6	3	SCAN				000107H	53M		
7	4	POWER	SCAN			000098H	47M		
8	5	ADRS				000051H	30M		
9	6	SCN5V	X-DCDC			000022H	21M		
A	7	Y-DCDC				000000H	57M		
B	8								
C									
D									
E									

■ Key operation

- <DOWN> : Shifting to SHUT DOWN
- <UP> : Shifting to PANEL WORKS
- <L/R> : Updating displayed information

B

■ Contents of the Display item

- The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred.
- When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
- The power-down history is not recorded when the power-down occurred at the same place and same time.

C

<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	DC/DC converter for X drive	X-DCDC
5 V power for SCAN	SCN5V	X-SUS	X-SUS
DC/DC converter for Y drive	Y-DCDC	DIG-DCDC	D-DCDC
Y-SUS	Y-SUS	Unknown	UNKNOW

D

E

F

[1-4] SHUT DOWN

- The shutdown history of panel section is displayed. No other layers are nested below this layer, and there are no adjustment items.

		1	5	10	15	20	25	30	32
1		PANEL	FACT.			IN1-30602-RGB-JHB			
	AREA1	SHUT	DOWN						
2		MAIN	SUB			000124H	23M		
3									
4	1	TMP-NG	TMP-H			000124H	21M		
5	2	SQ-LSI	RTRY			000115H	05M		
6	3	MD-DEV	DAC			000107H	53M		
7	4	SQ-LSI	VER-HS			000098H	47M		
8	5	MD-DEV	BACKUP			000051H	30M		
9	6	SQ-LSI	BUSY			000012H	07M		
A	7						H	M	
B	8						H	M	
C									
D									
E									

Key operation

- <DOWN> : Shifting to PANEL-1 ADJ (+)
- <UP> : Shifting to POWER DOWN
- <L/R> : Updating displayed information

Contents of the Display item

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred.
- When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.
- The shutdown history is not recorded when the shutdown occurred at the same place and same time.

<Cause of shutdown and corresponding OSD Indication >

Cause of shutdown (MAIN)		Cause of shutdown (SUB)	
Main cause	OSD Indication	Sub cause	OSD Indication
SQ_LSI	SQ_LSI	Communication Error	RTRY
		Drive Stop	SQNO
		Busy	BUSY
		Version mismatching (H/S)	VER-HS
		Version mismatching (H/M)	VER-HM
		Version mismatching (H/I)	VER-HI
MDU-DEVICE	MD-DEV	Digital EEPROM	EEPROM
		Backup EEPROM	BACKUP
		DAC IC	DAC
Abnormally in RST2 power supply	RST2	—	—
Abnormally in panel temperature	TMP-NG	High temperature of the panel	TMP-H
		Low temperature of the panel	TMP-L

A

[1-5] PANEL-1 ADJ (+)

This is a page for settings for the driving voltage and AM radio countermeasures. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.

On third line of the screen, the white balance, ABL table, and drive sequence in the current status are displayed.

(Items that have lower layers are the same.)

■ Key operation

- <DOWN> : Shifting to PANEL-2 ADJ (+)
- <UP> : Shifting to POWER DOWN
- <SET> : Shifting to the next nested layer

B

	1	5	10	15	20	25	30	32
1								
2								
3								
4								
5								
6								
7								
8								
9								
A								
B								
C								
D								
E								

■ Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Adding by one to the adjustment/setting value
- <LEFT> : Subtracting by one from the adjustment/setting value
- <VOL+> : Adding by 10 to the adjustment/setting value
- <VOL-> : Subtracting by 10 from the adjustment/setting value
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

C

	1	5	10	15	20	25	30	32
1								
2								
3								
4								
5								
6								
7								
8								
9								
A								
B								
C								
D								
E								

D

When entered to this layer, panel white balance and the gamma setting become the default temporarily for setting that is necessary for voltage adjustment. Turn off the noise option function.

E

F

<Next nested layer of PANEL-1 ADJ (+)>

No.	Item	OSD Indication	Variable Range	Setting Value	RS-232C Command	Remarks
1	Vsus voltage	VOL SUS <=>	000 to 255	Factory adjustment value	VSU	
2	Vysnfs voltage	VOL OFFSET <=>			VOF	
3	Vyprst voltage	VOL RST P <=>			VRP	
4	Vxpofs1 voltage	VOL XPOFS1 <=>			VX1	
5	Vxpofs2 voltage	VOL XPOFS2 <=>			VX2	
6	Vyknofs1,2 voltage	VOL YKNOFS1 D <=>			V1F	
7	Vyknofs3 voltage	VOL YKNOFS3 D <=>			V3F	
8	Vyknofs4 voltage	VOL YKNOFS4 D<=>			V4F	
9	Δ Vyknofs1,2/3/4	VOL YKNOFSA D<=>			VYF	
10	First reset (wedge width)	RESET1ST_KSB <=>	112 to 144	128	R1K	Factory use item
11	Second reset (wedge width)	RESET2ND_KSB <=>			R2K	
12	1SF - Y sus tail (wedge width)	YSTL_1SF_KSB <=>			Y1K	
13	1SF - Y sus tail (resonance down width)	YSTL_1SF_HZ <=>			Y1Z	
14	3SF and later - first X sus (resonance up width)	XSUS_1ST_B <=>			X1B	
15	2SF - second Y sus (resonance up width)	YSUS_2ND_B <=>			Y2B	
16	2SF - third X sus (resonance up width)	XSUS_3RD_B <=>			X3B	
17	2SF - repeat Y sus (resonance up width)	YSUS_B <=>			YSB	
18	2SF - repeat X sus (resonance up width)	XSUS_B <=>			XSB	
19	3SF and later - Y sus tail (wedge width)	YSTL_KSB <=>			YTK	
20	3SF and later - Y sus tail (resonance down width)	YSTL_HZ <=>			Y TZ	
21	2SF - Y sus tail (wedge width)	YSTL_2SF_KSB <=>			Y2K	
22	2SF - Y sus tail (resonance down width)	YSTL_2SF_HZ <=>			Y2Z	
23	3SF and later (2 pulses of SSF) - Y sus tail (wedge width)	YSTL_FMR_KSB <=>			YNK	
24	Timing between Scan and Address	SCAN ADRS ADJ <=>			SAT	
25	SUS frequency (AM radio anti-jamming)	SUS FREQ <=>	MODE1 to 8	MODE1	SFR	Note

Note: It is necessary to turn OFF and ON the power for reflecting the setting change.

A

- E

9

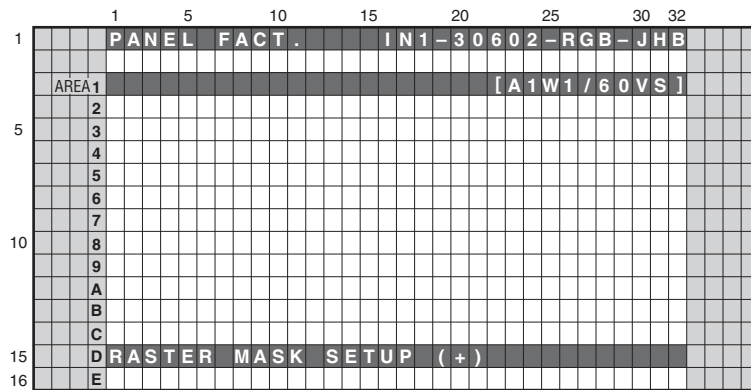
1

1

F

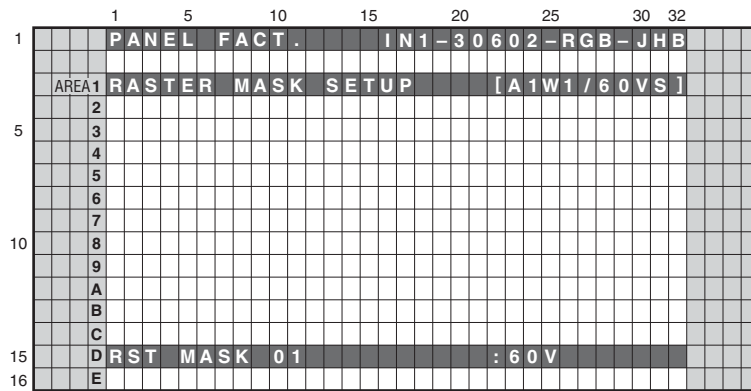
[1-9] RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

- <DOWN> : Shifting to PATTERN MASK SETUP (+)
- <UP> : Shifting to ETC. (+)
- <SET> : Shifting to the next nested layer



■ Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

- The changed sequence and the ABL/WB table are retained until the mask is turned off.

<Next nested layer of RASTER MASK SETUP (+)>

No.	Item	OSD Indication	MASK Display Sequence	RS-232C COMMAND	Remarks
1	Mask off	MASK OFF		MKR/VFQ	
2	Display raster mask 01	RST MASK 01 <=>	<=>50V<=>60V<=>60P<=> 72V<=>75V1<=>75V2<=>		
...		...			
26	Display raster mask 25	RST MASK 25 <=>			

[1-11] COMBI MASK SETUP (+)

- This menu set the COMBI MASK and the drive sequence at COMBI MASK state. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.

		1	5	10	15	20	25	30	32																						
1			P	A	N	E	L	F	A	C	T	.		I	N	1	-	3	0	6	0	2	-	R	G	B	-	J	H	B	
		A	R	E	A	1																									
		2																													
5		3																													
		4																													
		5																													
		6																													
		7																													
10		8																													
		9																													
		A																													
		B																													
		C																													
15		D	C	O	M	B	I	M	A	S	K	S	E	T	U	P	(+)												
16		E																													

Key operation

- <DOWN> : Shifting to PANEL INFORMATION
- <UP> : Shifting to PATTERN MASK SETUP (+)
- <SET> : Shifting to the next nested layer

		1	5	10	15	20	25	30	32
1			PANEL	FACT.				IN1-30602-RGB-JHB	
	AREA1		COMBI	MASK	SETUP			[A1W1/60VS]	
	2								
5		3							
		4							
		5							
		6							
		7							
10		8							
		9							
		A							
		B							
		C							
15		D	CMB	MASK	01			: 60V	
16		E							

Key operation

- <DOWN> : Shifting to the next MASK
- <UP> : Shifting to the previous MASK
- <RIGHT> : Changing MASK sequence (+)
- <LEFT> : Changing MASK sequence (-)
- <SET> : Determining the adjustment/setting value and shifting to the upper layer

- The changed sequence and the ABL/WB table are retained until the mask is turned off.

<Next nested layer of COMBI MASK SETUP (+)>

No.	Item	OSD Indication	MASK Display Sequence	RS-232C COMMAND	Remarks
1	Mask off	MASK OFF		MKC/VFQ	
2	Display raster mask 01	CMB MASK 01 <=>	<=>50V<=>60V<=>60P<=> 72V<=>75V1<=>75V2<=>		
...		...			
18	Display raster mask 17	CMB MASK 17 <=>			

[2] PANEL MAIN FACT.

■ Operation Items in the PANEL MAIN FACT. Menu

On the PANEL MAIN FACT. menu screen, acquisition of information on and settings for the display main unit can be performed, as shown in the table below:

No.	Indication	Description of functions
[2-1]	VERSION (3)	To indicate the versions of the microcomputers for the display (incl. those for the display main unit)
[2-2]	PM NG INFO.	To indicate the shutdown history of the display main unit
[2-3]	PM STATE INFO.	To indicate temperatures of the display main unit, state of the fans, brightness, and model information
[2-4]	DP_RX INFO.	Data on the DP receiver
[2-5]	PM_SETUP (+)	To clear the history and perform function settings whose data are not retained after the unit is turned off
[2-6]	PM_BEZEL_SETUP	To perform the bezel setup
[2-7]	PM_NG_CLEAR	To clear the shutdown history

■ Description of Indications on Each Layer

[2-1] VERSION (3)

The versions of the microcomputers for the display (incl. those for the display main unit) are indicated on the VERSION (3) screen. No other layers are nested below this layer, and there are no adjustment items.

Although the description on the VERSION (3) screen is included in the PANEL MAIN FACT. section, this screen actually belongs to the INFORMATION layer.

	1	5	10	15	20	25	30	32
1	I N F O R M A T I O N			I N 1 - 3 0 1 0 1 - N T V - J H B				
	V E R S I O N (3)							
5	P M A I N			- 0 2 A S			0 1 A	
	M O D U L E			- 0 2 A			0 2 A	
	S E Q P R S			- 0 1 U			0 1 U	
	D P R X			1 . 1 0				
10	D P R X H A R D			0 C 1 5				
	P A N E L I N F O			X X X X X X X X				
15								
16								

■ Contents of the Display item

- P MAIN: Version of the writing data for the Panel Main microcomputer
- MODULE: Version of the writing data for the Module microcomputer
- SEQ PRS: Version of the writing data for the sequence LSI
- DP RX: Version of the writing data for the DP receiver firmware
- DP RX HARD: Version of the hardware for the DP receiver
- PANEL INFO: Information on the display panel

A

[2-3] PANEL MAIN STATE INFORMATION

The display (unit) temperatures detected by the temperature sensors, FAN rotating status, the value acquired by the Room Light Sensor, and settings for the model are indicated.
No other layers are nested below this layer.

	1	5	10	15	20	25	30	32
1	PM	FACTORY			IN1-30101-NTV-JHB			
	PM	STATE	INFO.					
5	TEMP1	:		+60	(C)			
	TEMP3	T1:		+31	(C)			
		T2:		+31	(C)			
		T3:		***	(C)			
	FAN A	:		LOW		123	(D/A)	
10	FAN B	:		LOW		102	(D/A)	
	B-SENSOR:			1023	(A/D)			
	MODEL INFO.:			R1				
15								
16								

■ Key operation

- <DOWN> : Shifting to DP_RX INFO.
- <UP> : Shifting to PM NG INFO.
- <L/R> : Updating displayed information

B

■

■ Contents of the Display item

- TEMP1: The current display (panel) temperature is indicated. Temperature is in °C (Centigrade).
- TEMP3, T1-T2, T3 (reserved): The current display (unit) temperature is indicated. Temperature is in °C (Centigrade).
- FAN A, B: Controlled state of the fans (HIGH, LOW, STOP), D/A value
- B-SENSOR: A/D value of the Room Light Sensor
- MODEL INFO.: Model information, such as setup status of the bezel

C

■

D

[2-4] DP-RX INFORMATION

This screen is for use by engineers.
No other layers are nested below this layer.

	1	5	10	15	20	25	30	32
1	PM	FACTORY			IN1-30101-NTV-JHB			
	DP_RX	INFO.						
5	MR DEV-ID	:		00E036				
	PDP DEV-ID	:		00E036-070CA1				
15								
16								

■ Key operation

- <DOWN> : Shifting to PM_SETUP (+).
- <UP> : Shifting to PM STATE INFO.
- <L/R> : Updating displayed information

E

■

F

[2-5] PANEL MAIN SETUP (+)

The shutdown logs can be cleared, and temporary settings for functions that you do not wish to retain after the unit is turned off can be performed. Pressing the ENTER/SET key shifts the screen to the next nested layer below for item selection.

1	PM	FACTORY	IN1-30101-NTV-JHB
5	PM	SETUP	
10			
15	PM	SETUP (+)	
16			

Key operation

- <UP> : Shifting to DP_RX INFO.
- <ENTER/SET> : Shifting to the next nested layer

1	PM	FACTORY	IN1-30101-NTV-JHB
5	PM	SETUP	
10			
15	PM	BEZEL SETUP <=> R1	
16			

Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Changing the setting value upward (+)
- <LEFT> : Changing the setting value upward (-)
- <ENTER/SET> : Determining the changed value and return to the layer above

<Next nested layer of PANEL MAIN SETUP (+)>

No.	Item	OSD Indication	Content	RS-232C COMMAND	Remarks
1	Bezel setting	PM_BEZEL_SETUP <=>	<ul style="list-style-type: none"> • NO OPRT (No operation) • R1 (Bezel setting 1) Black KRP-500P/WYSIXK5, WYS5, LFT, WA5 • R2 (Bezel setting 2) White No use • R3 (Bezel setting 3) Beige No use • EP (For use by engineers) 	BZS	
2	SD history clear (panel main)	PM NG CLEAR <=>	<ul style="list-style-type: none"> • NO OPRT (No operation) • CLEAR (Clearance of data) 	CAL	

[2-6] PANEL MAIN BEZEL SETUP

Setup of the bezel can be performed on the PANEL MAIN BEZEL SETUP screen.

- Without the Panel Main Bezel setup, detection by the Room Light Sensor will not be performed properly.
- Even if Final setup (in System Operation mode [FSTS35] or in Display Standalone Operation mode [FSP]) is performed, the initial value (R1) will not be restored.

1	5	10	15	20	25	30	32
1	PM	FACTORY	IN1-30101-NTV-JHB				
	PM	SETUP					
5							
10							
15	PM	BEZEL	SETUP	<=>	R1		
16							

Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Changing the setting value upward (+)
- <LEFT> : Changing the setting value upward (-)
- <ENTER/SET> : Determining the changed value and return to the layer above

Select the bezel setup setting, using the L or R key, then press the SET key to determine the setting. When NO OPT is selected, bezel setup is not performed.

Each time the L or R key is pressed, setup settings are changed, as shown below:

→ R1 ↔ R2 ↔ R3 ↔ EP ↔ NO OPT ←

“NO OPT” is selected immediately after the PANEL MAIN BEZEL SETUP screen is displayed.

R1: The bezel setup is performed according to ROM table 01. (Default)

R2: The bezel setup is performed according to ROM table 02.

R3: The bezel setup is performed according to ROM table 03.

EP: The bezel setup is performed according to the EEPROM table. (For use by engineers)

NO OPT: Bezel setup is not performed.

[2-7] PANEL MAIN NG CLEAR

The shutdown logs can be cleared on the PM NG CLEAR screen.

1	5	10	15	20	25	30	32
1	PM	FACTORY	IN1-30101-NTV-JHB				
	PM	SETUP					
5							
10							
15	PM	NG	CLEAR	<=>	CLEAR		
16							

Key operation

- <DOWN> : Shifting to the next item
- <UP> : Shifting to the previous item
- <RIGHT> : Changing the setting value upward (+)
- <LEFT> : Changing the setting value upward (-)
- <ENTER/SET> : Determining the changed value and return to the layer above

“NG CLEAR” denotes clearing of the SD logs managed by the Panel Main microcomputer.

Select the setting, using the L or R key, then press the ENTER/SET key to clear the data.

When NO OPT is selected, NG CLEAR is not performed.

Pressing the L or R key toggles between CLEAR and NO OPT, as shown below:

CLEAR ↔ NO OPT

5678

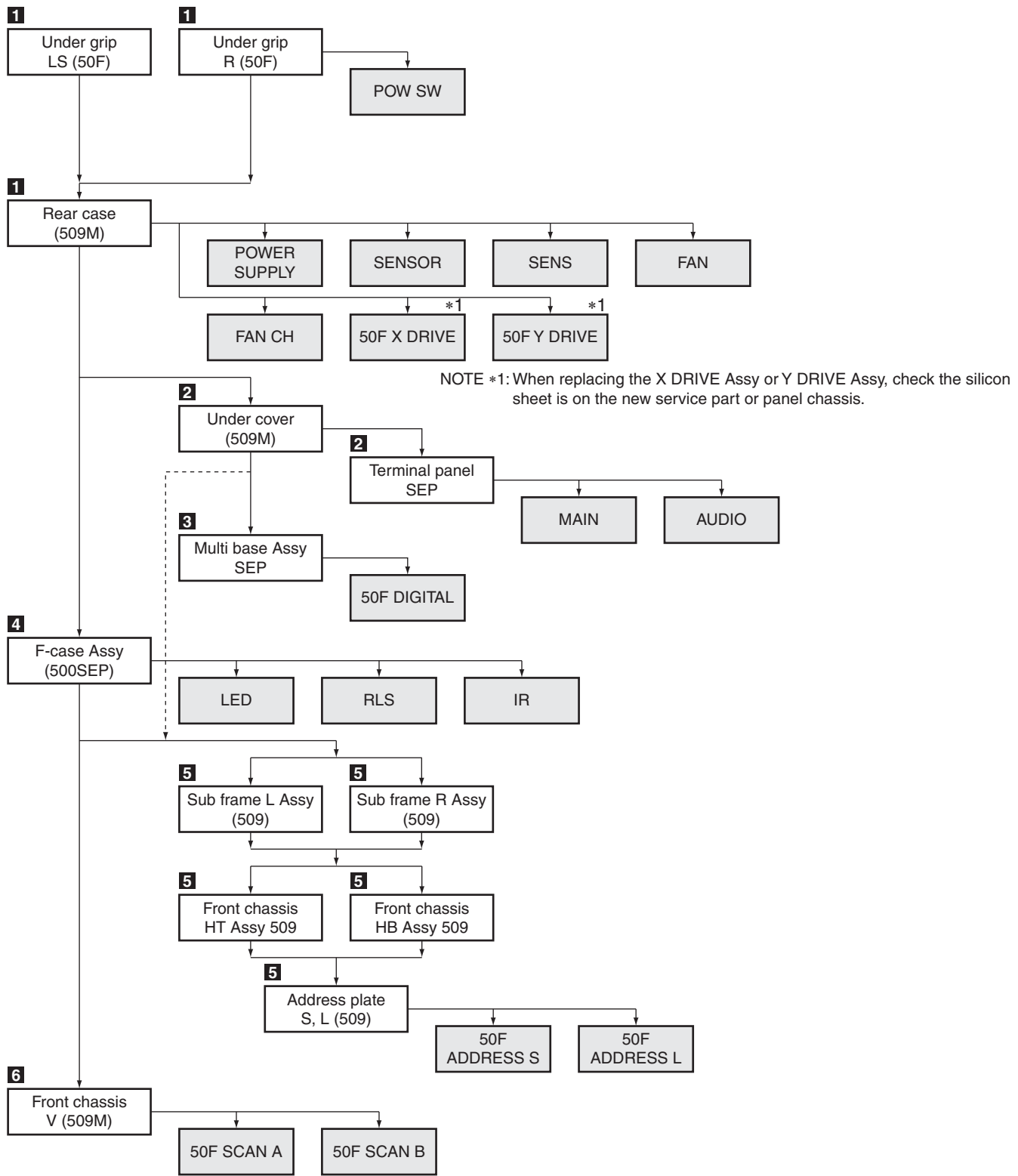
7. DISASSEMBLY

7.1 FLOWCHART OF REMOVAL ORDER

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

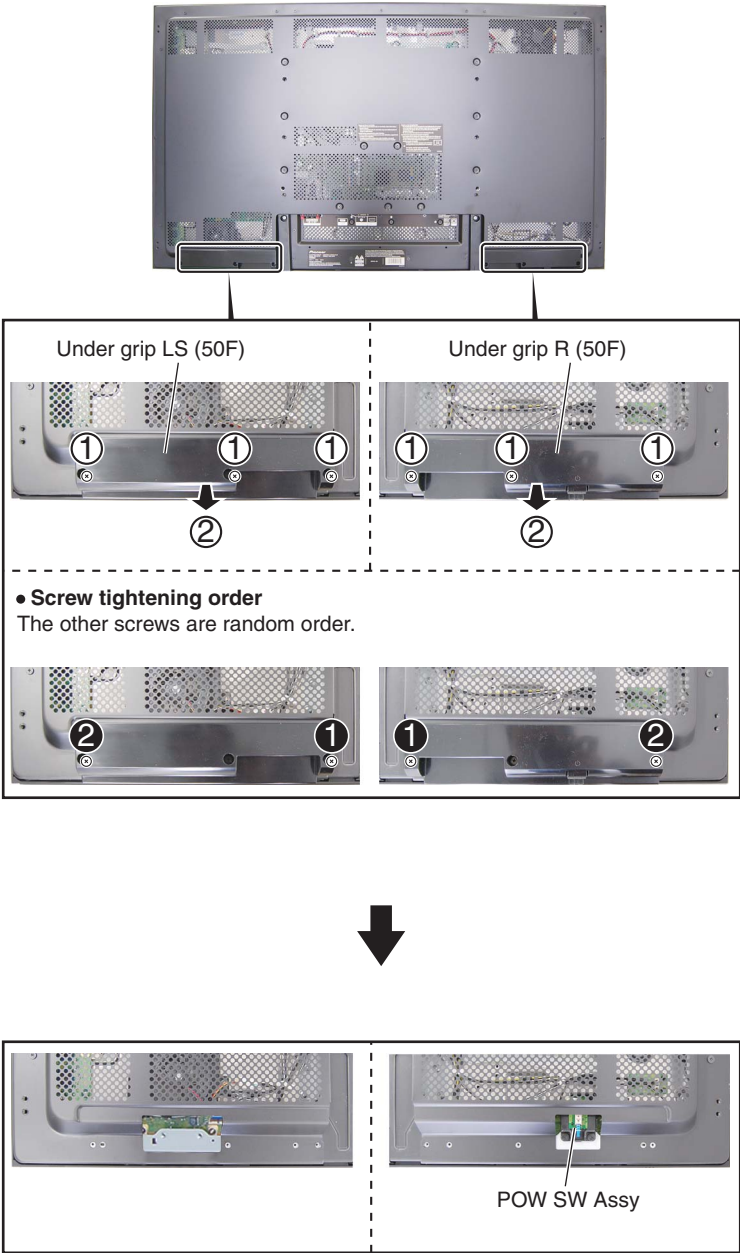
It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

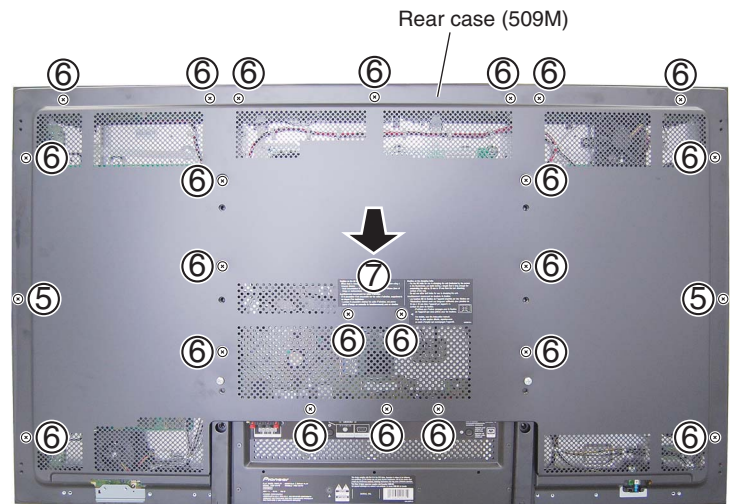
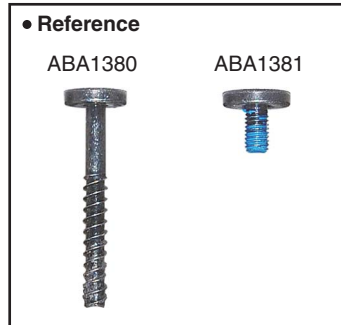
1 Rear Case (509M)

- Under grip LS (50F) and R (50F)
- ① Remove the six N grip screws. (ABA1381)
- ② Remove the under grips LS (50F) and R (50F).



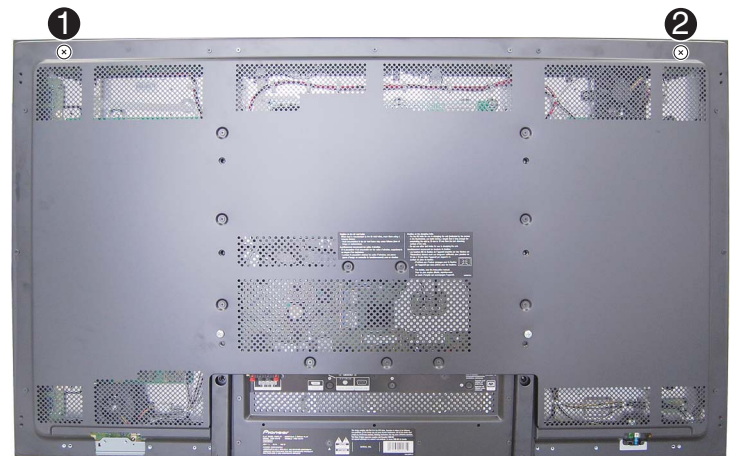
● Rear case (509M)

- ⑤ Remove the two screws. (ABA1380)
- ⑥ Remove the 22 N grip screws. (ABA1381)
- ⑦ Remove the rear case (509M).



● Screw tightening order

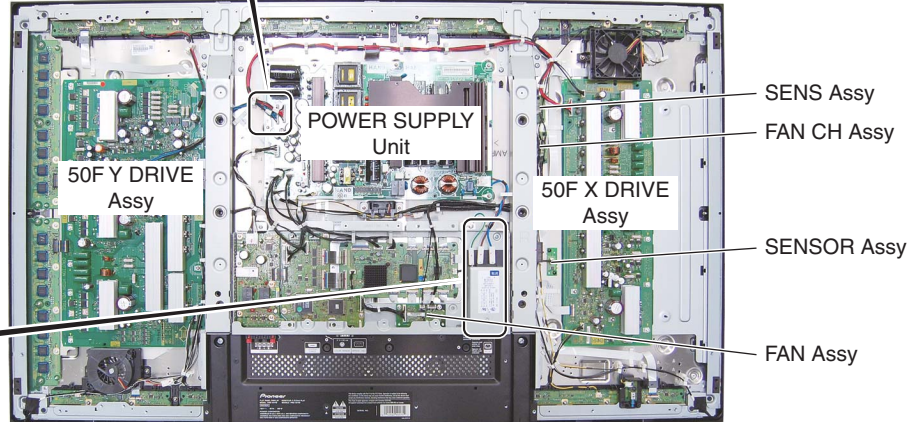
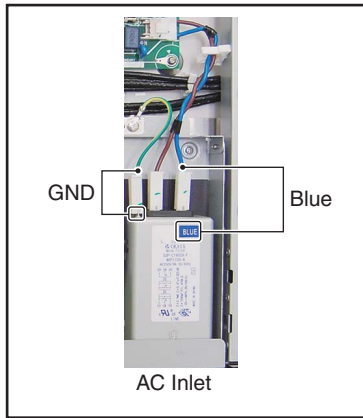
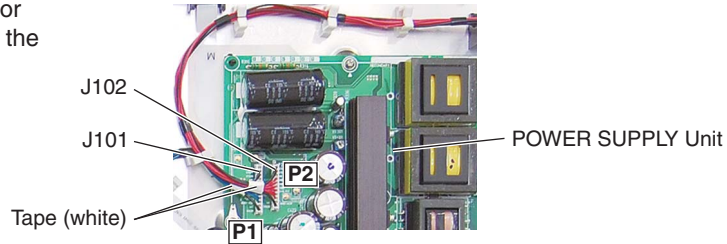
The other screws are random order.



A ■ Notes on Lead Dressing

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

The J101 and J102 cables require correct orientation for connection. Connect the connectors with white tape to the POWER SUPPLY Unit.



D ■ Notes on Removing the POWER SUPPLY Unit

Discharge of residual electric charge

Immediately after the power cord is unplugged, residual electric charge remains for about 3-5 minutes in the capacitor inside the POWER SUPPLY Unit.

Before removing the POWER SUPPLY Unit, make sure that residual electric charge has fallen to a safe level.

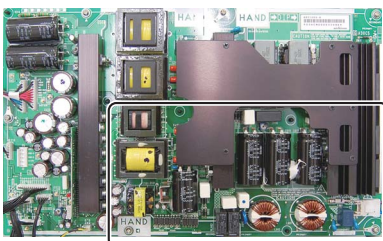
How to discharge residual electric charge rapidly

Discharge residual electric charge by connecting two 220 Ω (10 W) forced discharging resistors (440 Ω in total,) one to each end, of C101.

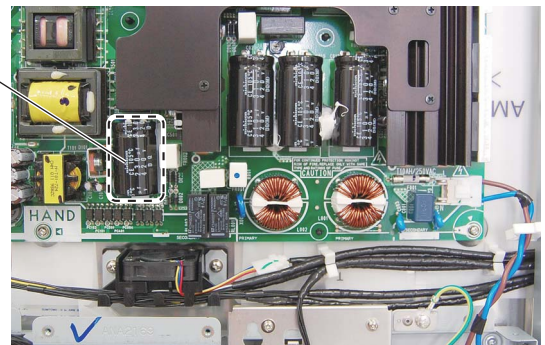
<How to remove the POWER SUPPLY Unit>

- ① Make sure that the power cord is unplugged. Check the voltage of both ends of C101, using a tester.
- ② Wait until the voltage at both ends of C101 has fallen to 5 V or less.
- ③ When the voltage becomes less than 5 V, disconnect the connectors of the POWER SUPPLY Unit then remove it.

POWER SUPPLY Unit



Points of checking residual electric charges:
After making sure that the voltage of both ends of C101 has fallen to 5 V or less, remove the POWER SUPPLY Unit.

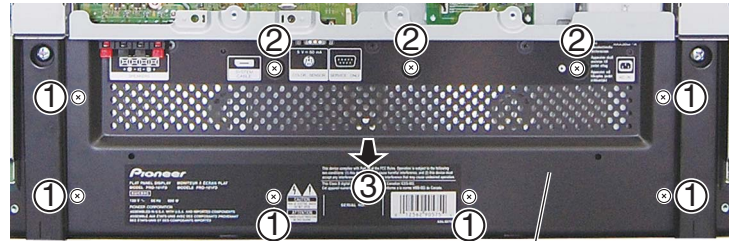


2 MAIN and AUDIO Assys

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

● Under cover (509M)

- ① Remove the six N grip screws. (ABA1381)
- ② Remove the three screws. (ABA1389)
- ③ Remove the under cover (509M).



Under cover (509M)

● Screw tightening order

The other screws are random order.



● Terminal panel SEP

- ① Remove the two screws. (BPZ30P080FTB)
- ② Remove the one screw. (AMZ30P060FTB)
- ③ Remove the one screw. (BMZ30P060FTB)
- ④ Remove the two hexagon headed screws. (ABA1382)
- ⑤ Remove the two N grip screws. (ABA1381)(KRP-500P/WYSIXK5)
Remove the two screws. (AMZ30P060FTB)(KRP-500P/WYS5, LFT, WA5)
- ⑥ Remove the two N grip screws. (ABA1381)

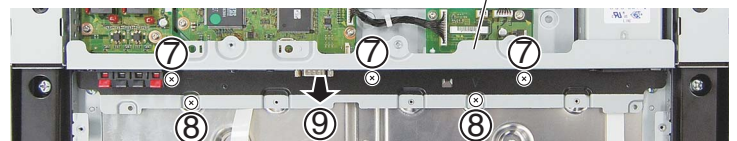
Note:

Do not use an electric screwdriver.
If the screw is over-tightened, the screw thread may be damaged.



Terminal panel SEP

- ⑦ Remove the three N grip screws. (ABA1381)
- ⑧ Remove the two screws. (ABZ30P080FTC)
- ⑨ Remove the terminal panel SEP.



● Screw tightening order

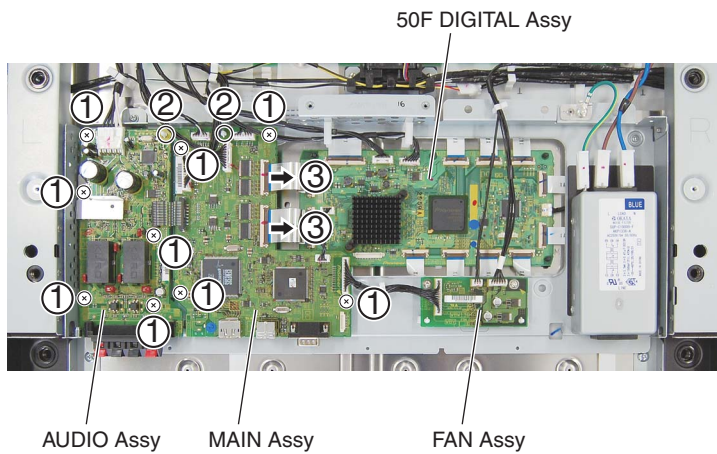
The other screws are random order.



A

● MAIN and AUDIO Assys

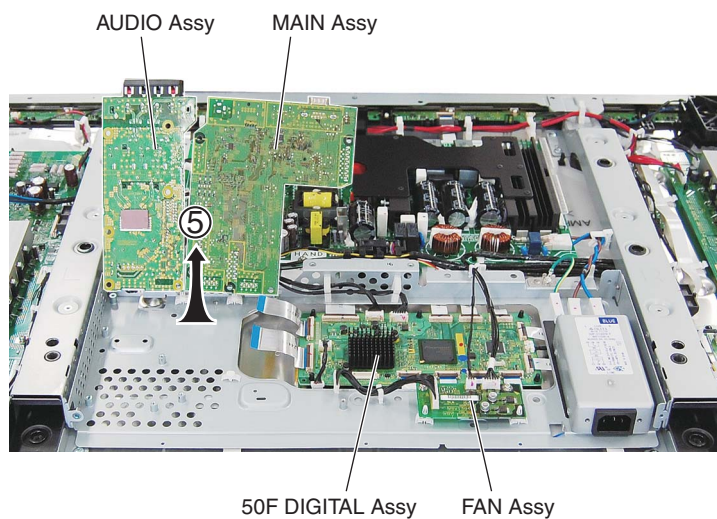
- ① Remove the nine screws. (PMB30P060FNI)
- ② Release the two PCB spacers (reuse).
- ③ Disconnect the two flexible cables.
- ④ Disconnect cables, connectors, as required.



B

C

- ⑤ Lift the MAIN and AUDIO Assys to the direction of the arrow.



D

E

F

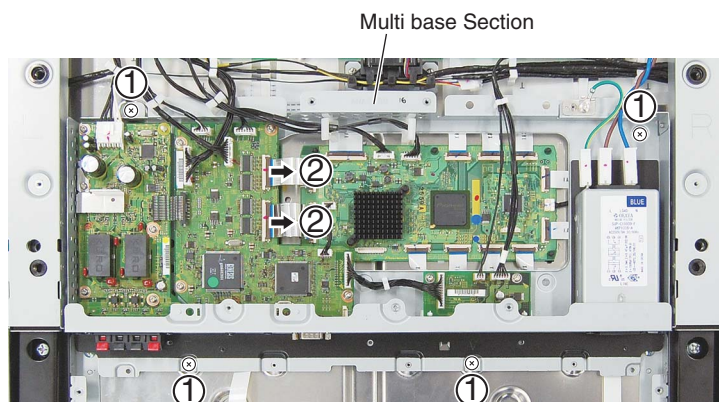
3 50F DIGITAL Assy

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

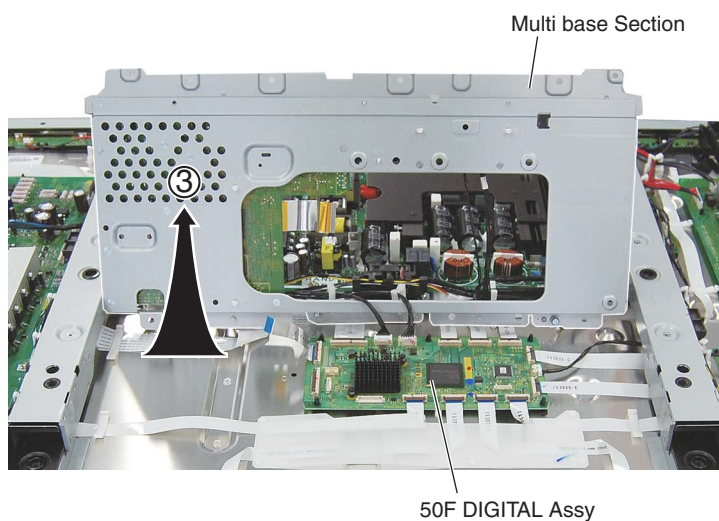
Note:

When you remove whole Multibase Section, it is not necessary to remove terminal panel SEP.

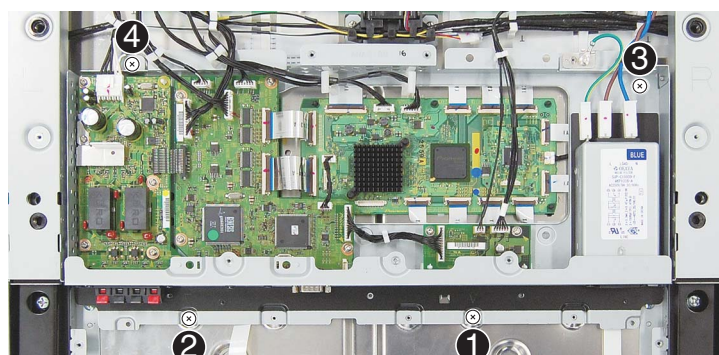
- ① Remove the four screws. (ABZ30P080FTC)
- ② Disconnect the two flexible cables.



- ③ Lift the multi base section to the direction of the arrow.



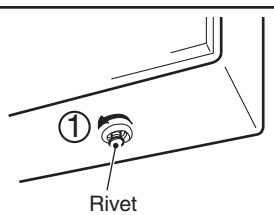
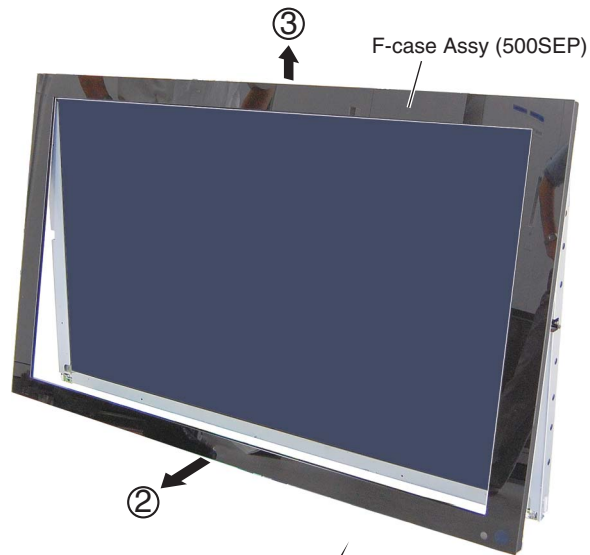
• Screw tightening order



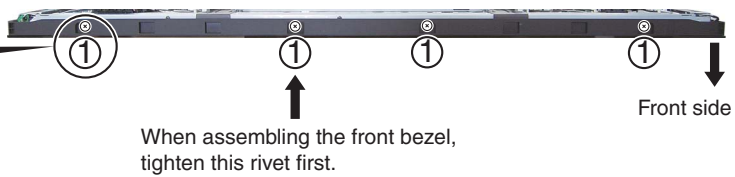
KRP-500P

4 F-Case Assy (500SEP)

- ① Remove the four rivets.
- ② Pull the lower part of the F-case Assy (500SEP) toward you and out.
- ③ Remove the F-case Assy (500SEP), by pulling it upward.



Turn it not to press the rivet.
(Because when the rivet presses, fit in once again.)



LED Assy



RLS Assy

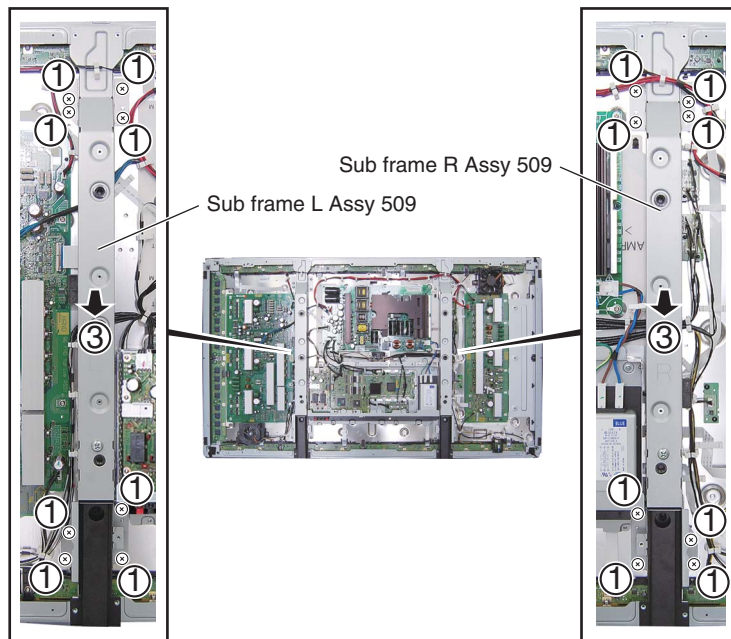
IR Assy



5 Access to 50F ADDRESS L and S Assys

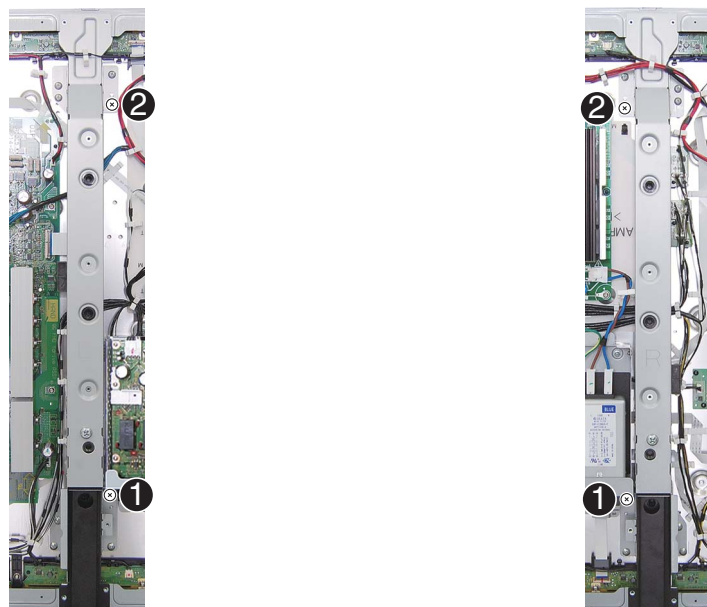
● Sub frame L and R Assy (509)

- ① Remove the 16 screws. (TBZ40P060FTC)
- ② Disconnect cables, connectors, as required.
- ③ Remove the sub frame L and R Assys (509).



● Screw tightening order

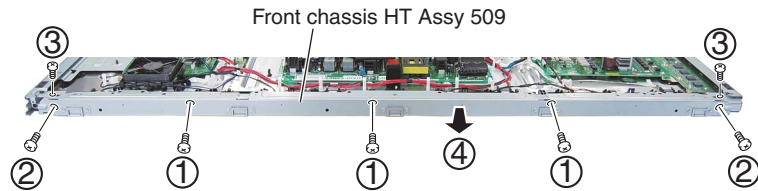
The other screws are random order.



A

● Front chassis HT Assy 509

- ① Remove the three screws. (APZ30P080FTB)
- ② Remove the two screws. (ABZ30P080FTC)
- ③ Remove the two N grip screws. (ABA1381)
- ④ Remove the front chassis HT Assy 509.

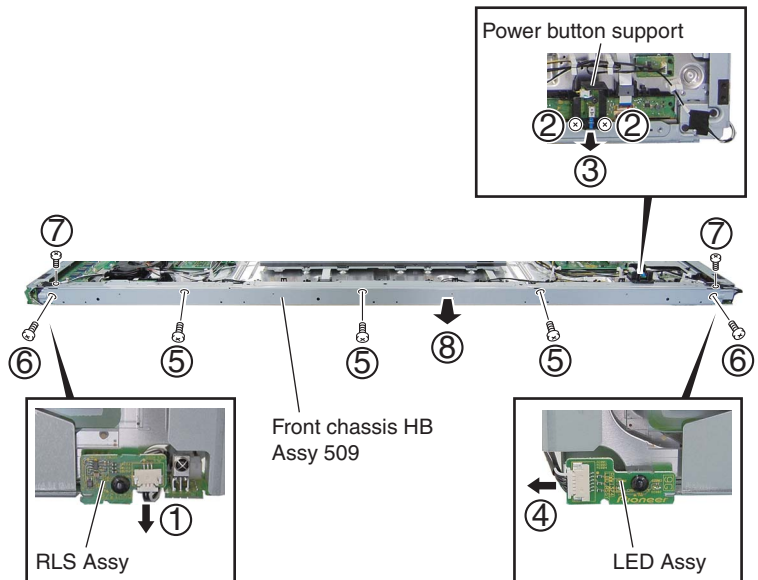


B



● Front chassis HB Assy 509

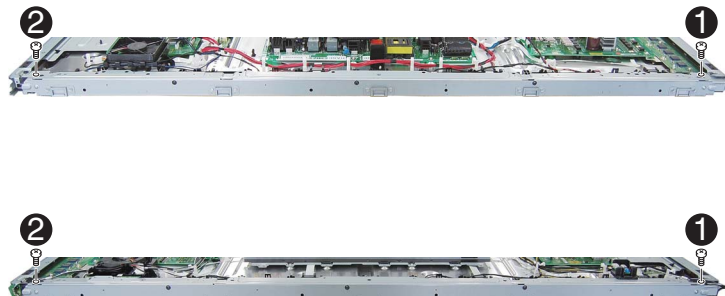
- ① Disconnect the one connector.
- ② Remove the two N grip screws. (ABA1381)
- ③ Remove the power button support.
- ④ Disconnect the one connector.
- ⑤ Remove the three screws. (APZ30P080FTB)
- ⑥ Remove the two screws. (ABZ30P080FTC)
- ⑦ Remove the two N grip screws. (ABA1381)
- ⑧ Remove the front chassis HB Assy 509.



D

● Screw tightening order

The other screws are random order.

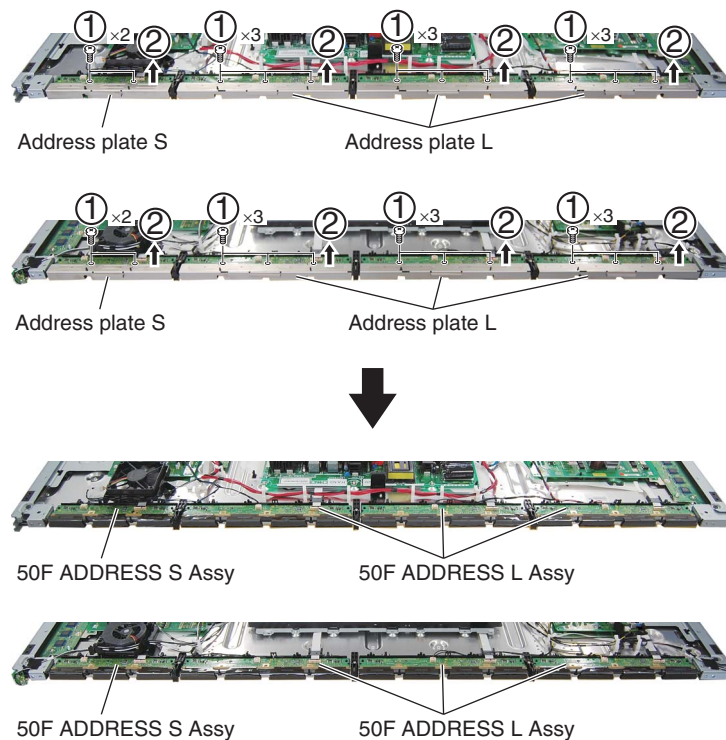


F



● Address plate S and L

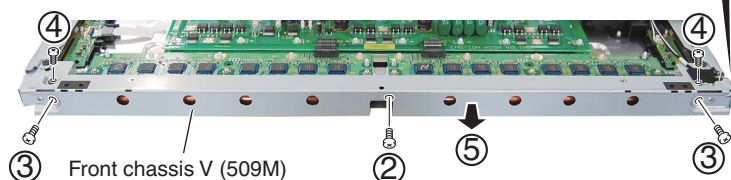
- ① Remove the 22 screws. (ABA1351)
- ② Remove the two address plates S and six address plates L.



6 Access to 50F SCAN A and B Assys

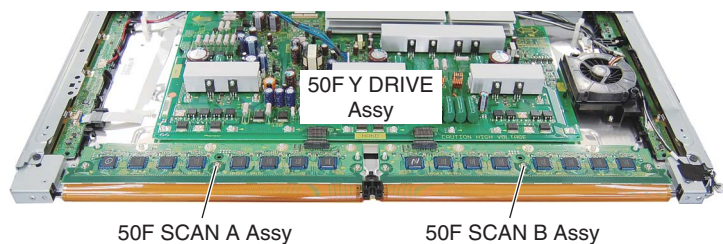
● Front chassis V (509M)

- ① Disconnect the one connector.
- ② Remove the one screw. (APZ30P080FTB)
- ③ Remove the two screws. (ABZ30P080FTC)
- ④ Remove the two N grip screws. (ABA1381)
- ⑤ Remove the front chassis V (509M).




● Screw tightening order

The other screws are random order.



8. EACH SETTING AND ADJUSTMENT

- 
- A

1.

At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.

2.

Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.

3.

Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

B

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA” .
DIGITAL Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
X DRIVE Assy	➡	No adjustment required
Y DRIVE Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to “8.3 HOW TO CLEAR HISTORY DATA” and “8.4 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED”.
MAIN Assy (Note)	➡	No adjustment required
AUDIO Assy	➡	No adjustment required
SENSOR Assy	➡	Writing of backup data is required. Refer to the “8.2 BACKUP OF THE EEPROM (DIGITAL ASSY)”.
Other assemblies	➡	No adjustment required

Note:

After replacing the MAIN Assy, be sure to perform the FINAL SETUP.
To perform the FINAL SETUP for the display main unit and module via the RS-232C connector on the display, set the unit to Standalone Operation mode, by issuing the SYSS00 command, then issue the FAY command then FSP command. (Common to models of any size and for any destination)
To perform the FINAL SETUP of the entire system, i.e., the display and the Media Receiver (MR), input commands via the RS-232C connector on the MR in System Operation mode.
For details, refer to the service manual of the Media Receiver.

■ When any of the following parts is replaced

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.

If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

PCB Assy No.	Assy Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWV2559	DIGITAL Assy	IC3302	Flash ROM	AGC1096
		IC3601	Flash UCOM	AGC1095
AWV2599	X DRIVE Assy	• Parts of X D-D CON BLOCK		
AWV2600	Y DRIVE Assy	<ul style="list-style-type: none"> • Parts of Y VF D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 1 • Parts of Y MAIN D-D CON BLOCK 2 		
AWW1393	MAIN Assy	IC5001	Display port Rx IC	GM68020H-CG-K
		IC5003	EEPROM	S25FL016A0LMF013
		IC5005	EEPROM	M2404HEPROM
		IC7001	Flash UCOM	MB91F356B-G-SPE1-K
		IC7003	EEPROM	BR24L02FJ-W

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

For the parts described in the table below, replacement of individual parts is difficult, because a heat pad is provided under the bottom of the ICs.

PCB Assy No.	Assy Name	Parts that Replacement is Possible		
		Ref No.	Function Name	Part No.
AWW1393	MAIN Assy	IC4501	Regulator IC	NJM2871BF05
		IC4503	Regulator IC	PQ025ENA1ZPH
		IC4504	Regulator IC	NJM2846DL3-18
		IC7004	Regulator IC	NJM2846DL3-33
AWW1398	AUDIO Assy	IC8331	Regulator IC	NJM2846DL3-33
		IC8401	Digital Amp	TAS5122DCA
AWW1394	FAN Assy	IC1201	Regulator IC	PQ200WNA1ZPH
		IC1202	Regulator IC	PQ200WNA1ZPH

A

POWER SUPPLY Unit



The assembly must be replaced as a unit, and no part replacement is allowed.

MAIN Assy



No adjustment required

AUDIO Assy



No adjustment required

B

DIGITAL Assy



No adjustment required

X DRIVE Assy



No adjustment is required after replacement of parts other than those shown in "8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED."

Y DRIVE Assy



No adjustment is required after replacement of parts other than those shown in "8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED."

C

ADDRESS Assy



No adjustment required

SENSOR Assy



No adjustment required

Other assemblies



No adjustment required

D

E

F

■ Outline

Adjustment data are stored in the EEPROM on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup) on the SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

■ Backed up data

- Drive voltage adjustment value
 - Panel white balance adjustment value
 - Drive waveform adjustment value
 - Hour-meter count
- Pulse-meter count
 - P-ON counter value
 - Serial No.
 - PD/SD histories

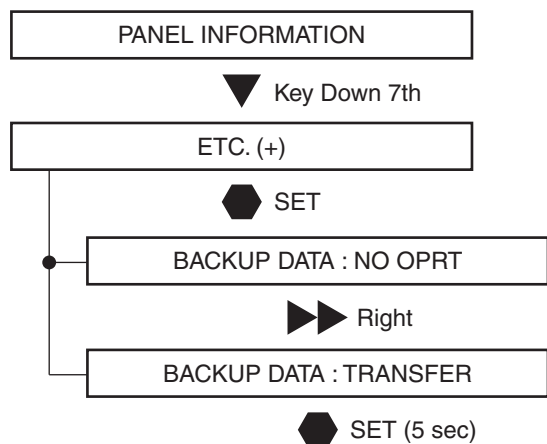
■ How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

Immediately after the DIGITAL Assy is replaced, the EEPROM on the DIGITAL Assy is in the status "adjustment not completed," and the EEPROM for backup on the SENSOR Assy is in the status "adjustment completed." The LED on the main unit warns you that the adjustment data in the EEPROM for backup have not been copied to the EEPROM on the DIGITAL Assy, by lighting the red LED and flashing the blue LED. In such a case, the adjustment data for backup can be used by copying the data to the EEPROM on the DIGITAL Assy, with the following procedures:

(1) Copying, using the Factory menu

- ① Turn on the power.
- ② Enter the Panel Factory mode.
- ③ Display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP".
- ④ Copy the backup data, as shown in the figure below.



- ⑤ Check if "ADJUSTED" is set for "DIG. EEP" on the PANEL INFORMATION page.
- ⑥ Turn off the power.

(2) Copying, using the RS-232C commands

- ① Turn on the power.
- ② Issue the FAY command.
- ③ With the QS2 command, confirm that the main unit adjustment flag is "adjustment not completed" and that the adjustment backup flag is "adjustment completed."
- ④ Issue the BCP command to transfer the data stored in the EEPROM for backup.
- ⑤ With the QS2 command, confirm that the main unit adjustment flag becomes "adjustment completed."
- ⑥ Turn off the power.

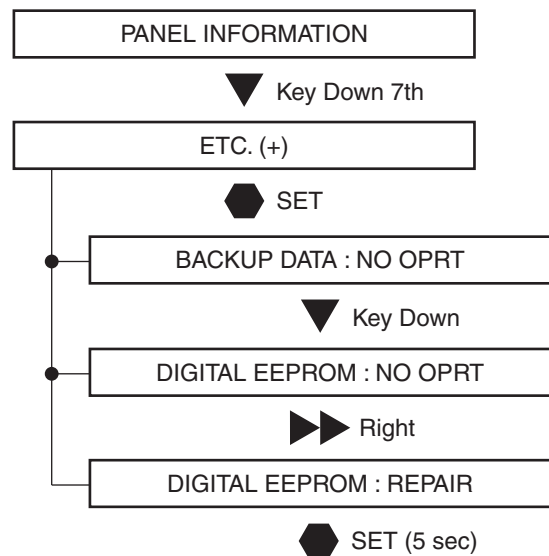
Note: If both the DIGITAL and SENSOR Assys are to be replaced, replace the SENSOR Assy first in order to store the backup data. Then turn the unit on then back off again, then replace the DIGITAL Assy.

2. When manual adjustment is required after the DIGITAL Assy is replaced with one for service

If backup data cannot be transferred to the DIGITAL Assy because of defective parts, etc., after the DIGITAL Assy is replaced and manual adjustment is performed, those manually adjusted data can be registered as adjusted data with the following procedures. Once the data on the DIGITAL Assy are registered as adjusted data, the adjustment data for backup will be automatically updated each time the unit is turned off. Therefore, if a DIGITAL Assy with adjusted data is mounted on the unit, the following procedures are not required, even after manual adjustment.

(1) Copying, using the Factory menu

- ① Turn on the power.
- ② Enter the Panel Factory mode.
- ③ Display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP".
- ④ Register the changed adjustment data as adjusted data, as described for the following procedures, then transfer them as backup data.



- ⑤ Check if "ADJUSTED" is set for "DIG. EEP" on the PANEL INFORMATION page.
- ⑥ Turn off the power.

(2) Copying, using the RS-232C commands

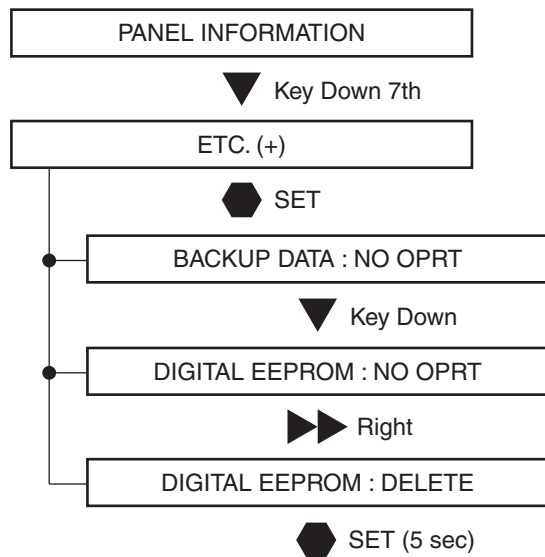
- ① Turn on the power.
- ② Issue the FAY command.
- ③ With the QS2 command, confirm that the main unit adjustment flag is "adjustment not completed."
- ④ Issue the FAJ command to register the changed adjustment data as adjusted data then transfer them as backup data.
- ⑤ With the QS2 command, confirm that the main unit adjustment flag becomes "adjustment completed."
- ⑥ Turn off the power.

3. When a secondhand DIGITAL Assy is to be reused

A DIGITAL Assy in good condition that had been mounted in another product can be reused. Before reuse, by following the procedures described below, make the data in the EEPROM on the DIGITAL Assy "adjustment not completed" data in order to prevent accidental updating of backup data when the secondhand DIGITAL Assy is mounted in another product

(1) Copying, using the Factory menu

- ① Turn on the power.
- ② Enter the Panel Factory mode.
- ③ Display the PANEL INFORMATION page, then check if "ADJUSTED" is set for "DIG. EEP".
- ④ Make the data in the EEPROM on the DIGITAL Assy "adjustment not completed" data, by following the procedures below:



- ⑤ Check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page.
- ⑥ Turn off the power.

(2) Copying, using the RS-232C commands

- ① Turn on the power.
- ② Issue the FAY command.
- ③ With the QS2 command, confirm that the main unit adjustment flag is "adjustment completed."
- ④ Issue the UAJ command to make the data in the EEPROM on the DIGITAL Assy "adjustment not completed" data.
- ⑤ With the QS2 command, confirm that the main unit adjustment flag becomes "adjustment not completed."
- ⑥ Turn off the power.

Note: If you mount a secondhand Assy to the product without performing the above procedures, the adjustment data and logs for the main unit specific to the product will be erased, and those of the secondhand Assy will be copied when the unit is turned off.

A

■ Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.
Clearance of those data can be performed in the ETC layer of the Factory menu or with RS232C commands.

■

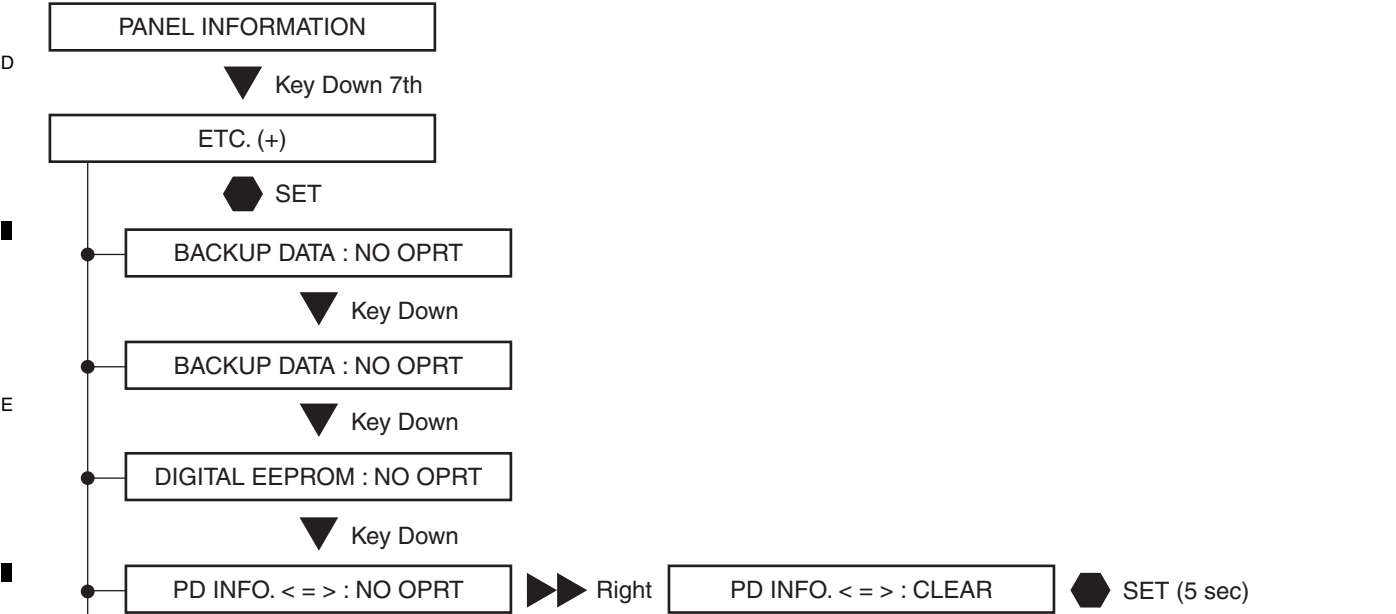
Item	Content	Clearing at the Replacement			Clearing method	
		Panel	POWER SUPPLY Unit	Other parts	Factory Menu (ETC layer)	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	HR-MTR INFO.	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	PM/B1-B5	CPM
Shutdown history of the panel	Causes and hour-meter values for the last eight shutdowns (SD) of the Panel	Must be cleared	No need to be cleared	No need to be cleared	SD INFO.	CSD
Power-down history	Causes and hour-meter values for the last eight power-downs (PDs) of the Panel	Must be cleared	No need to be cleared	No need to be cleared	PD INFO.	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	P COUNT INFO.	CPC
MAX TEMP	Historical max. temperature of the panel	Must be cleared	Must be cleared	Must be cleared	MAX TEMP.	CMT

-
- Notes:
- As the pulse-meter count is used for each correction function, the log must be cleared when the panel is replaced.
 - After you clear the log, the unit must be turned off then back on again to reflect the cleared data for each correction function. If any adjustment is required after clearing the log, be sure to turn the unit off then back on again before adjustment.
- C

(1) Clearance of logs, using the Factory menu

-
- Turn on the power.
 - Enter the Panel Factory mode.
 - Clear the various logs, as shown in the figure below.

Note: The following example shows how to clear the PD log (PD INFO.). To clear other items, select each item you wish to clear then perform the same procedures.



-
- Turn off the power.

(2) Using the RS-232C commands

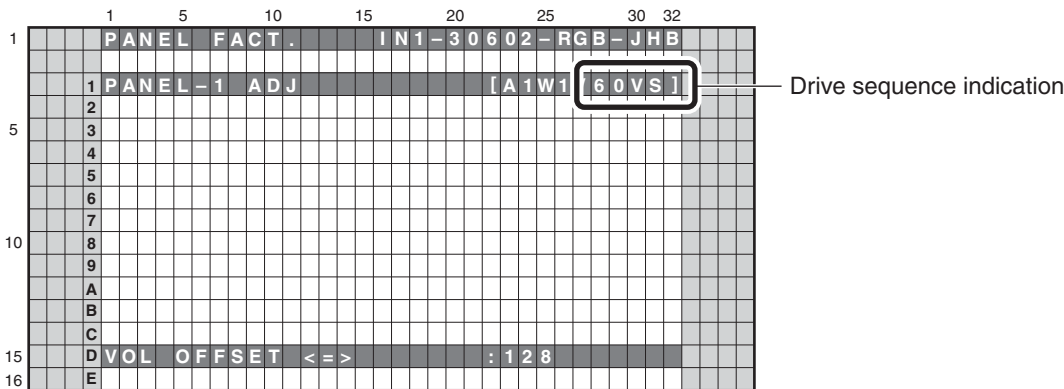
- F
- Turn on the power.
 - Issue the FAY command.
 - Issue the Delete command for a log you wish to clear.
 - Turn off the power.

After the panel is replaced with one for service, voltage margin adjustment is required.

[Preparation]

Basically, voltage margin adjustment is performed using the Panel Factory menu.
After the panel is replaced and the unit is turned on, clear the pulse meter first.
For details on how to clear the pulse meter, see "8.3 HOW TO CLEAR HISTORY DATA".

- *1: As various corrections are made referring to the pulse-meter count to calculate how long the panel has been used, if adjustment of the panel for service is performed without clearing the pulse-meter count, proper adjustments will not be performed.
- *2: The drive sequence for Video 60-Hz is used for adjustment. When adjustment is made using the Panel Factory menu, the current drive sequence is displayed on the screen, as shown in the figure below. Make sure that 60VS is always indicated during adjustment.
- *3: Select the input fuction excepting PC.



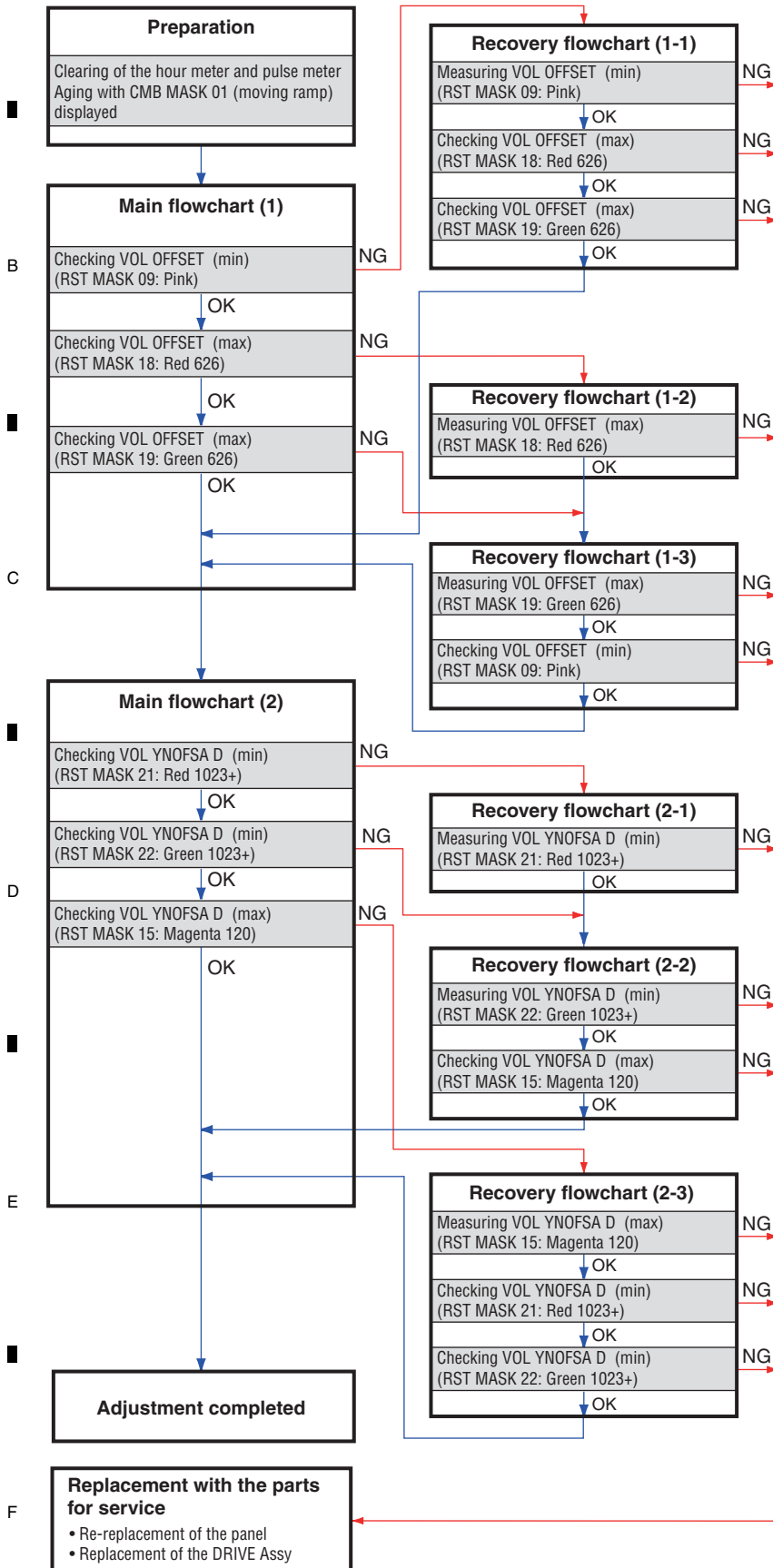
Example of the On-Screen display during Panel Factory mode

[Supplement]

In the "PANEL-1ADJ" layer, the Panel White Balance value is reset to default, Panel Gamma is set to Straight, Noise is set to OFF, LUT mode is set to ON and Reset active control is set to OFF.
If adjustment is performed using RS232C commands, unlike the case of Factory menu operation, adjustments are not interlocked. Therefore, settings must be performed individually, by issuing commands. (See the section on preparations before adjustment.)

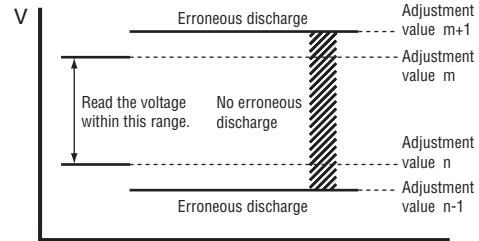
A

Overview



Range of margin measuring

Read the voltage within the hysteresis (stricter value).



Definition of limits for the voltage margins (abnormal lit/dead cells)

Abnormal lit cells:

- Five or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

Abnormal dead cells

- Fifteen or fewer abnormal cells on the whole screen
- Two or fewer abnormal cells within a radius of 1 cm

*: Abnormal cells visually recognizable at a distance of 1 meter from the panel must be counted.

*: Cells displayed abnormally for less than one second are not counted as abnormal cells.

Definition of tones for the measuring signals

FHD signal (1920*1080)/Video 60-Hz sequence
/Dither: ON, L dither: ON, noise: OFF

Pink	RST MASK 09 (R 1023 /G 626 /B 1023)
Magenta 120	RST MASK 15 (R 120 /G 0 /B 120)
Red 626	RST MASK 18 (R 626 /G 0 /B 0)
Green 626	RST MASK 19 (R 0 /G 626 /B 0)
Blue 626	RST MASK 20 (R 0 /G 0 /B 626)
Red 1023+	RST MASK 21 (R 1023 /G 120 /B 120)
Green 1023+	RST MASK 22 (R 120 /G 1023 /B 120)
Blue 1023+	RST MASK 23 (R 120 /G 120 /B 1023)

Interlocked settings for Voltages Vyknofs1/3/4

For the 9th-generation PDPs, interlocked setting for Voltages Vyknofs1/3/4 is available on the Factory menu or with RS232C commands, for easier adjustment. Therefore, in the adjustment flowchart, the interlocked setting function is used. (Individual setting for each adjustment value is also possible, as in the conventional setting methods.

Set Voltage	Factory Menu	Command
Vyknofs1 individual	VOL YNOFS1 D	[V1F]
Vyknofs3 individual	VOL YNOFS3 D	[V3F]
Vyknofs4 individual	VOL YNOFS4 D	[V4F]
Vyknofs1,3,4 interlocked	VOL YNOFSA D	[VYF]

Note:

- The initial value for the interlocked setting value is 128, including for factory preset values.
- See "[3] DRIVE ASSY" of "5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS" for calculation of actually used voltage values.

Preparation before adjustment

[Replacement with the panel for service is completed.]

Procedures for resetting corrections for change over time

Turn the unit on. / [PON]

Enter Factory mode. / [FAY]

Set PM/B1-B5 to CLEAR (to clear the pulse meter). / [CPM]

Set HR-MTR to CLEAR (to clear the hour meter). / [CHM]

Turn the unit off. / [POF]

Procedures for stabilizing the panel before adjustment

Turn the unit on. / [PON]

Enter Factory mode. / [FAY]

Enter the tentative setting value of the replacement panel

Setting Item	Tentative Setting Value
VOL SUS / [VSU ***]	128
VOL OFFSET / [VOF ***]	VOF indication value
VOL RST P / [VRP ***]	VRP indication value
VOL XPOFS1 / [VX1 ***]	085
VOL XPOFS2 / [VX2 ***]	063
VOL YNOFS1 D / [V1F ***]	V1F indication value
VOL YNOFS3 D / [V3F ***]	V3F indication value +0
VOL YNOFS4 D / [V4F ***]	V4F indication value
VOL YNOFSA D / [VYF ***]	128

Note: "+0" shows α .

Display CMB MASK 01 (moving ramp). / [MKC S01]

Select Video 60-Hz sequence. / [VFQ S03]

Perform aging for 30 minutes.

[To the Main flowchart (1)]

* To reflect the results of log clearing for each correction function, the unit must be turned off then back on again. Before adjustment, be sure to turn the unit off then back on again.

Indication example of the adjustment label of service panel

AWU1359 Data **VOF=113**
VRP=018 **V1F=138** **V3F=128+ α**
V4F=149 **Hour Meter** _____ **H**
 Data 08/02/28 Chassis CXX99999
 Time 18:27 Pnl FD4A0808100123

Note: The symbol " α " denotes the adjustment value plus 0.

* Each setting value described on the adjustment label denotes an indicated data value but not a real voltage value. Therefore, just enter the data value as a setting value.

* To store the VFQ S03 command in memory, transmit it after displaying the mask.

Note:

* When you perform the adjustment with RS232C commands, issue the following commands in addition.

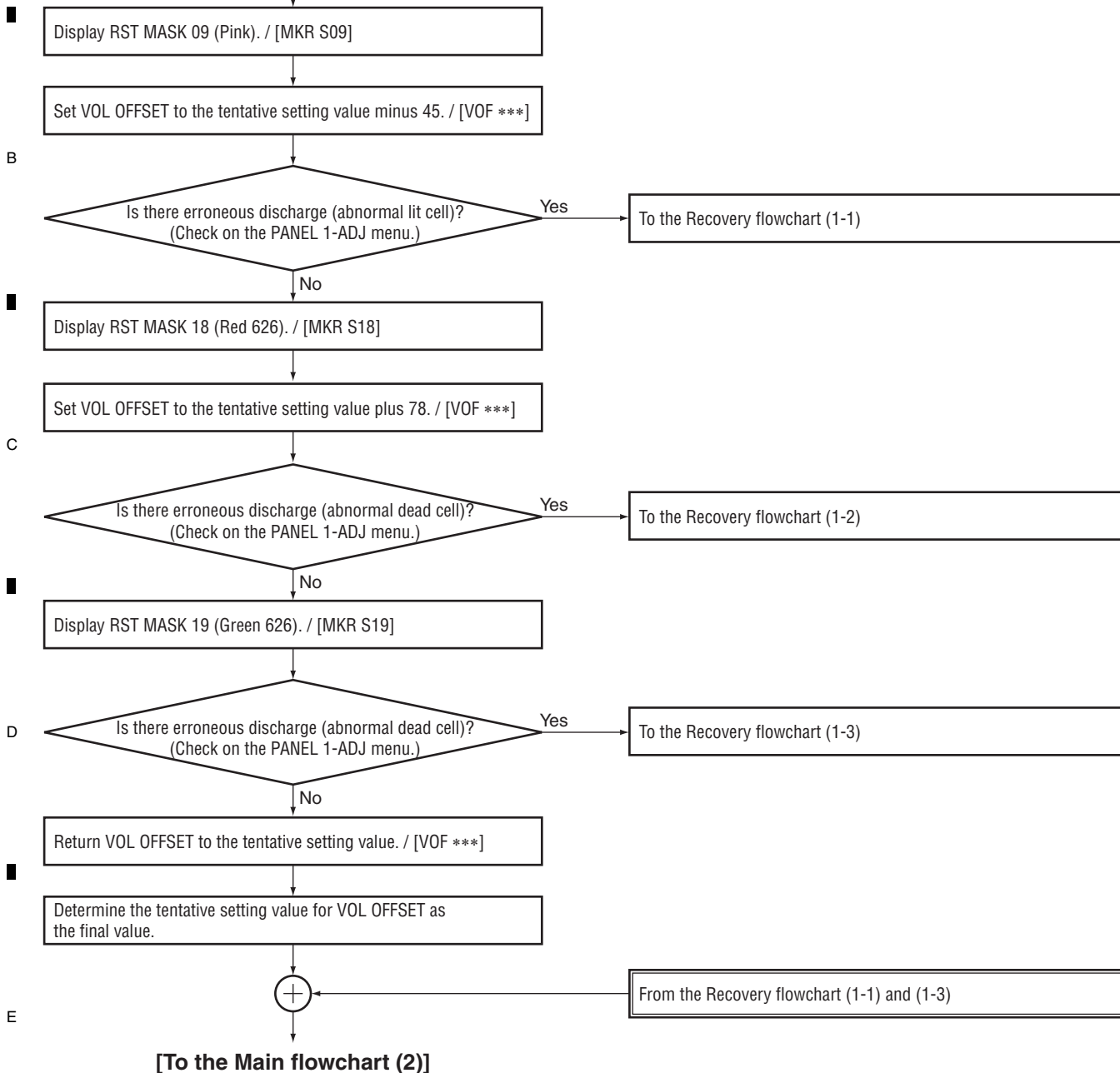
* If the unit is shut down in the middle of performing the adjustment flowchart, reissuing of the command is required.

[PAV S00]	: To set panel drive mode to Factory
[VFQ S03]	: To set Drive Sequence to Video 60-Hz
[SQM S01]	: To set Drive Sequence to Video
[WBI S01]	: To temporarily reset the Panel WB adjustment value to default (WBI S00 cancels this setting.)
[PGR S00]	: To set the gamma R value to that for Factory mode
[PGG S00]	: To set the gamma G value to that for Factory mode
[PGB S00]	: To set the gamma B value to that for Factory mode
[DIZ S03]	: Dither ON, L dither ON, noise OFF.
[\$1800000001]	: LUT mode ON

A

■ Main flowchart (1)...Checking VOL OFFSET

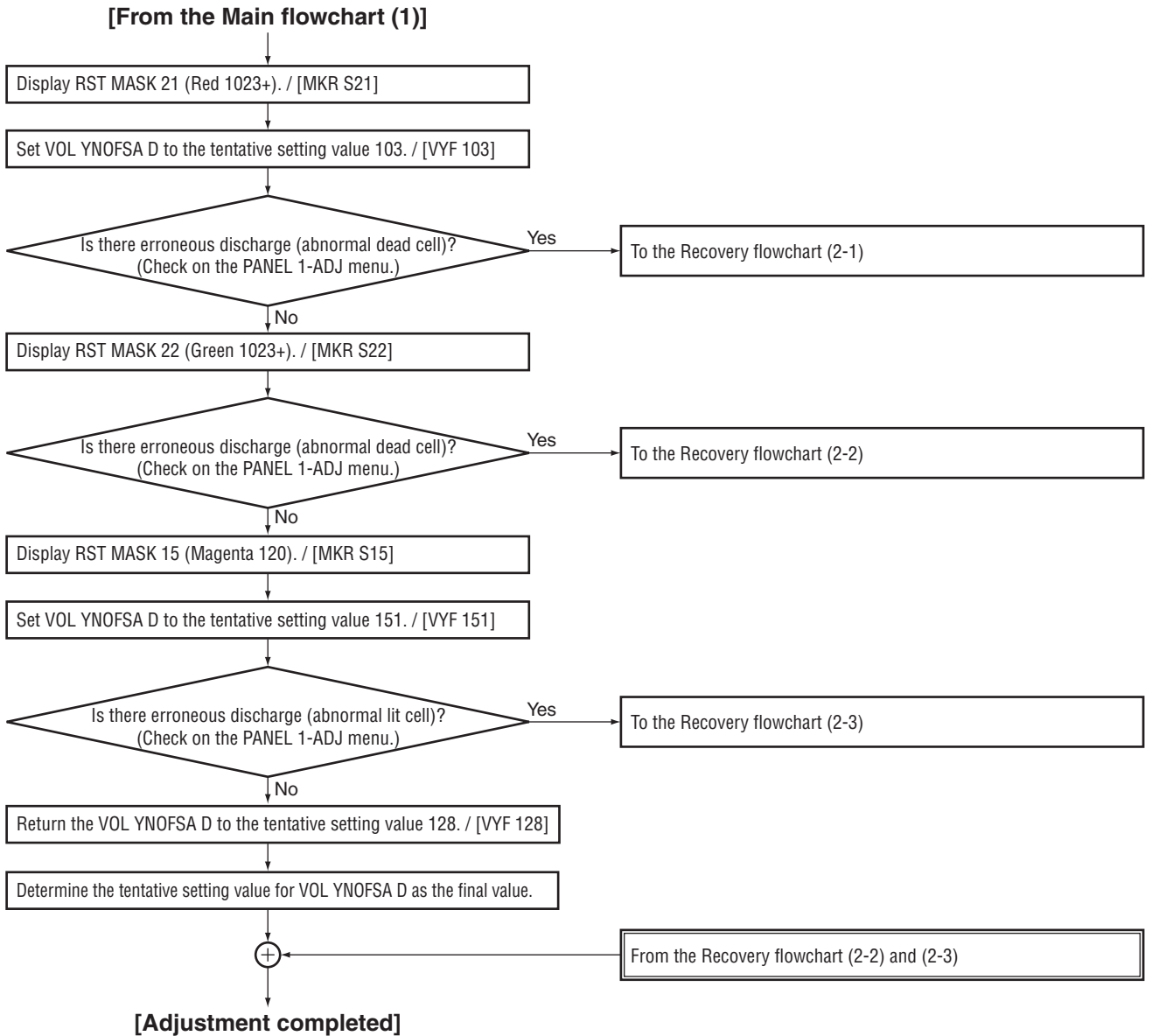
[From Preparation]



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■ Main flowchart (2)...Checking VOL YNOFSA D



Note:

Make sure that the following values become the final setting values.

VOL SUS *1	VOL XPOSF2 *1
VOL OFFSET	VOL YNOFS1 D *1
VOL RST P *1	VOL YNOFS3 D *1
VOL XPOFS1 *1	VOL YNOFS4 D *1
	VOL YNOFS4 A

*1: The tentative setting value becomes the final value.

Recovery flowchart (1-1)...Changing the VOL OFFSET setting

[From the Main flowchart (1)]

RST MASK 09 (Pink)

Gradually increase the VOL OFFSET value until disappear the discharge (lit cell).
The VOL OFFSET value must be 101 or less.

Current VOL OFFSET > 096?

Yes

Replacement of abnormal circuits or
re-replacement of the panel required

No

Display RST MASK 18 (Red 626). / [MKR S18]

Set VOL OFFSET to the current setting value plus 123. / [VOF ***]

Is there erroneous discharge (abnormal dead cell)?
(Check on the PANEL 1-ADJ menu.)

Yes

Replacement of abnormal circuits or
re-replacement of the panel required

No

Display RST MASK 19 (Green 626). / [MKR S19]

Is there erroneous discharge (abnormal dead cell)?
(Check on the PANEL 1-ADJ menu.)

Yes

Replacement of abnormal circuits or
re-replacement of the panel required

No

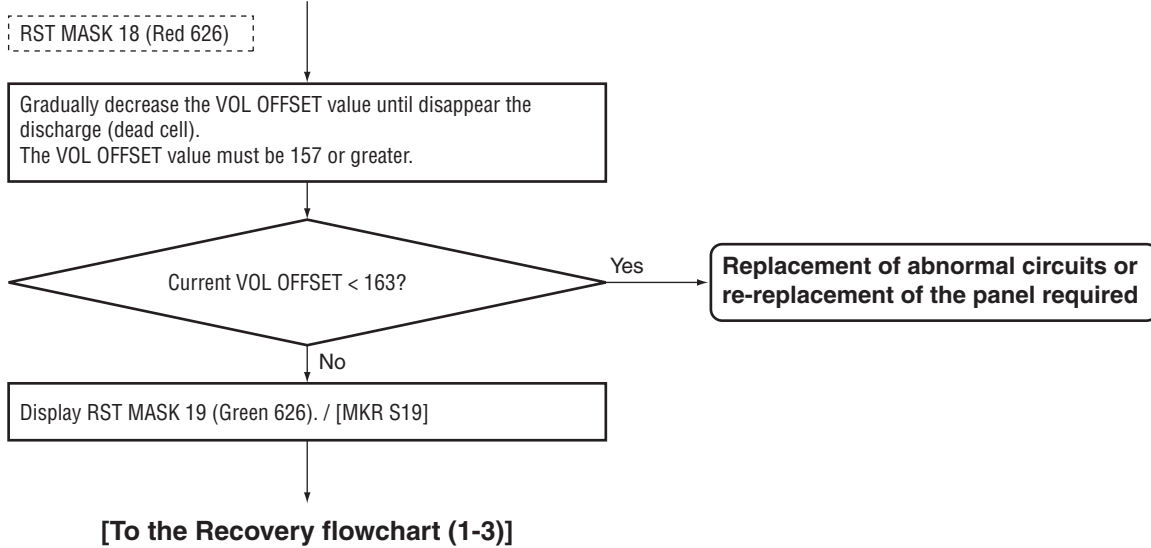
Set VOL OFFSET to the current setting value minus 78. / [VOF ***]

Determine the current VOL OFFSET setting value as the final value.

[To the Main flowchart (1)]

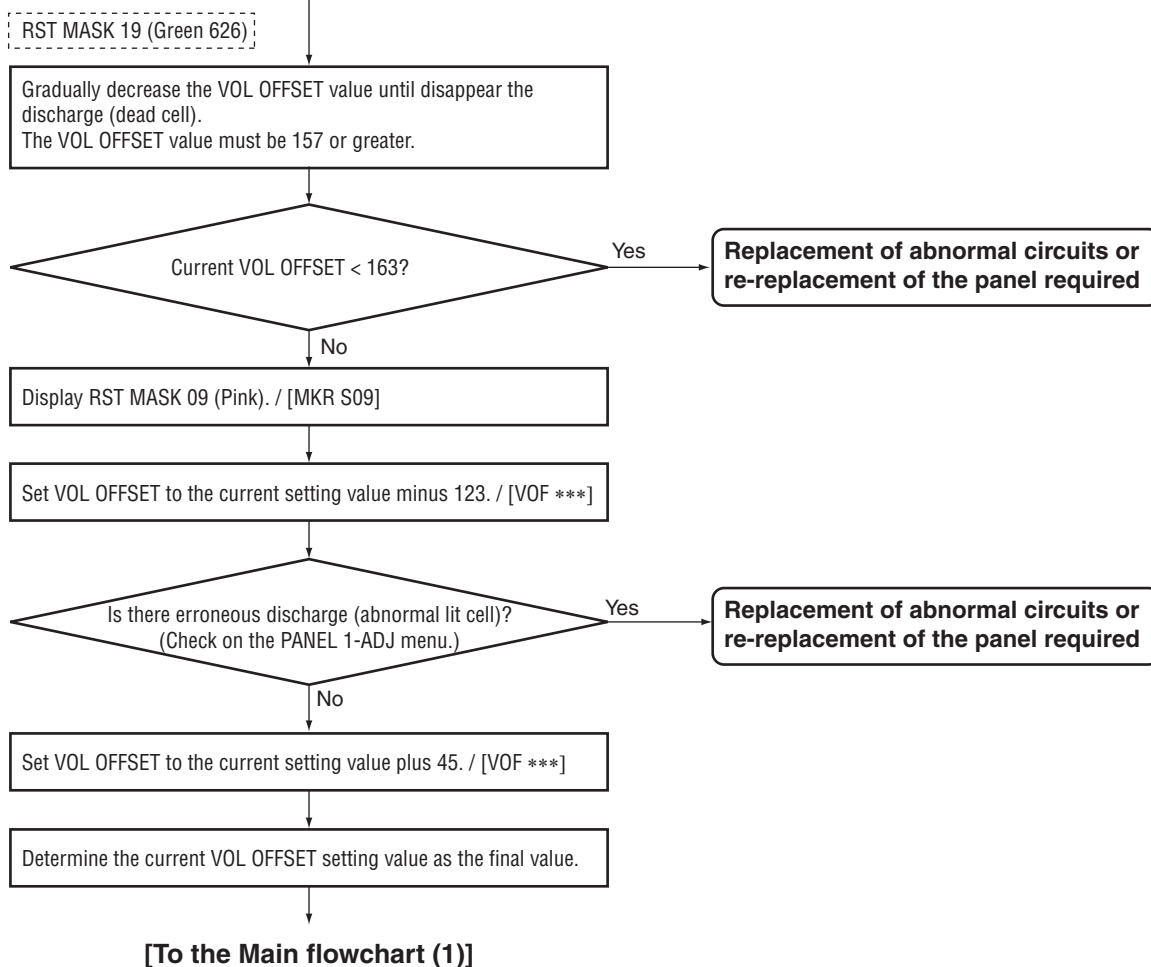
Recovery flowchart (1-2)...Changing the VOL OFFSET setting

[From the Main flowchart (1)]



Recovery flowchart (1-3)...Changing the VOL OFFSET setting

[From the Main flowchart (1) / Recovery flowchart (1-2)]



Recovery flowchart (2-1)...Changing the VOL YNOFSA D setting

[From the Main flowchart (2)]

RST MASK 21 (Red 1023+)

Gradually increase the VOL YNOFSA D value until disappear the discharge (dead cell).
The tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D must be 254 or less.

Tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D > 252?

Yes

Replacement of abnormal circuits or re-replacement of the panel required

No

Display RST MASK 22 (Green 1023+). / [MKR S22]

[To the Recovery flowchart (2-2)]

Recovery flowchart (2-2)...Changing the VOL YNOFSA D setting

[From the Main flowchart (2) / Recovery flowchart (2-1)]

RST MASK 22 (Green 1023+)

Gradually increase the VOL YNOFSA D value until disappear the discharge (dead cell).
The tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D must be 254 or less.

Tentative setting value of VOL YNOFS3 D + current setting value of VOL YNOFSA D > 252?

Yes

Replacement of abnormal circuits or re-replacement of the panel required

No

Display RST MASK 15 (Magenta 120). / [MKR S15]

Set VOL YNOFSA D to the current setting value plus 48. / [VYF ***]

Is there erroneous discharge (abnormal lit cell)?
(Check on the PANEL 1-ADJ menu.)

Yes

Replacement of abnormal circuits or re-replacement of the panel required

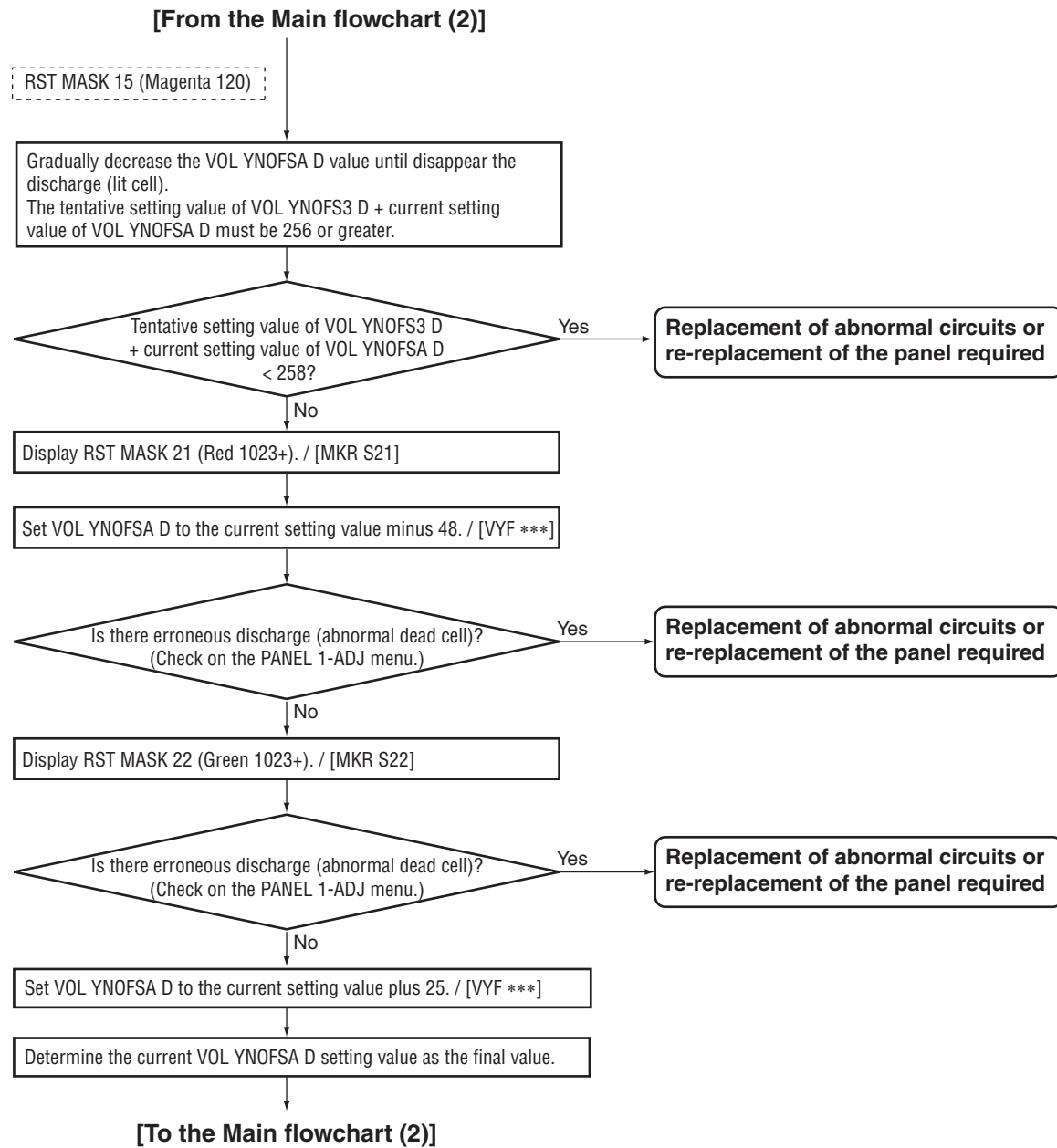
No

Set VOL YNOFSA D to the current setting value minus 23. / [VYF ***]

Determine the current VOL YNOFSA D setting value as the final value.

[To the Main flowchart (2)]

Recovery flowchart (2-3)...Changing the VOL YNOFSA D setting



1 2 3 4

8.5 ADJUSTMENT WHEN THE DRIVE ASSYS ARE REPLACED

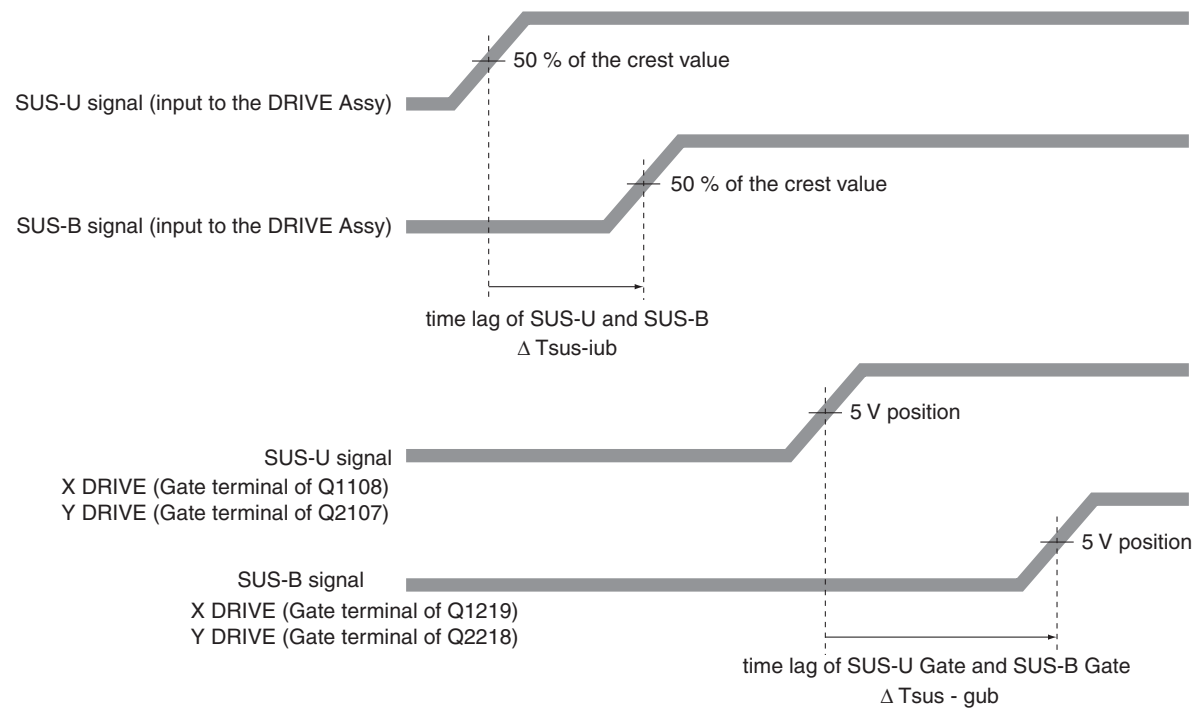
Waveform adjustments required when replacing the following parts of the X DRIVE and Y DRIVE Assys.

Assy Name	Ref No.	Part Name	Part Category	Remarks
X DRIVE Assy	IC1101	PS9818-1(P)	Photo Coupler	
	IC1104	TND307TD	FET Driver	
	IC1204	PS9818-2(P)	Photo Coupler	
	IC1209	TND307TD	FET Driver	
Y DRIVE Assy	IC2101	PS9818-1(P)	Photo Coupler	
	IC2103	TND307TD	FET Driver	
	IC2201	PS9818-1(P)	Photo Coupler	
	IC2203	TND307TD	FET Driver	

TIME LAG ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

- ① Measure the time lag for the SUS-U signal to the SUS-B signal.
② Check the time lag for the SUS-B Gate signal to the SUS-U Gate signal.
Adjust the variable control so that the time lag of Gate becomes " time lag of input signal + $\alpha \pm 5$ nsec."

Note: • Be sure to set the Drive to OFF for adjustment.
• For details on measuring points of waveform, see the figure below.



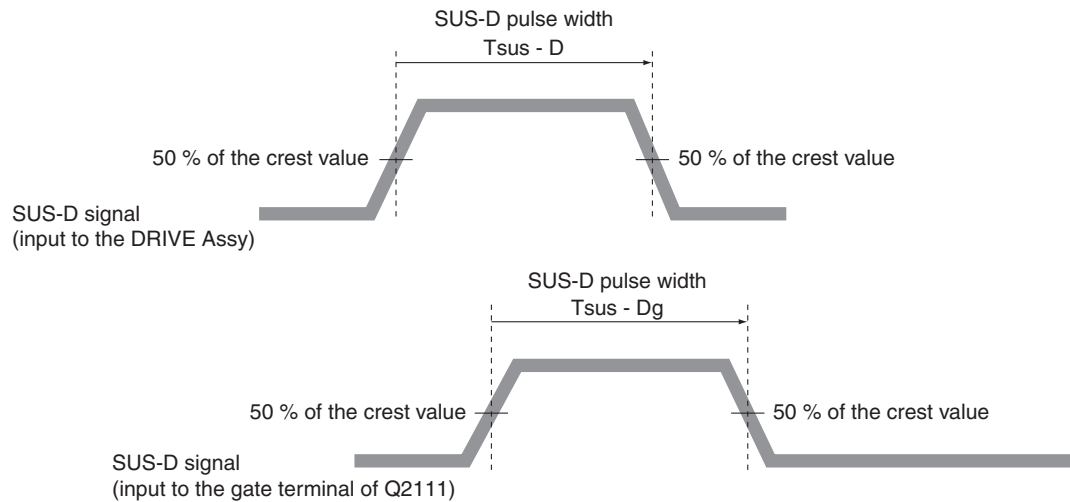
Time lag of SUS-U Gate and SUS-B Gate : $\Delta T_{sus-gub}$
Adjust so that " $\Delta T_{sus-gub} = \Delta T_{sus-iub} + \alpha \pm 5$ nsec," using the variable controls shown in the table below:

Assy	VR	Value of α
X DRIVE Assy	VR1002	60 nsec
Y DRIVE Assy	VR2002	60 nsec

■ DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-D)

- ① Measure the pulse width of the SUS-D signal.
- ② Check the pulse width of the SUS-D input signal (gate terminal of Q2111).
Adjust the variable control so that the pulse width of the SUS-D input signal (gate terminal of Q2111) becomes the same pulse width ± 5 nsec as the SUS-D signal.

Note: • For details on measuring points of waveform, see the figure below.



SUS-D pulse width: Tsus - Dg

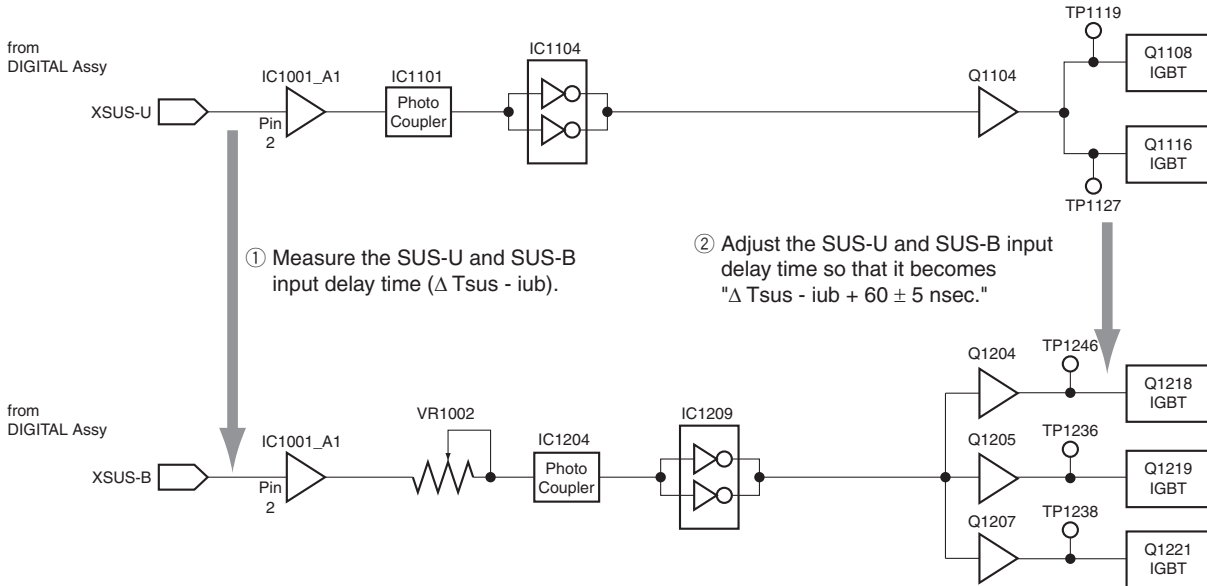
Adjust so that "Tsus - Dg = Tsus - D \pm 5 nsec," using the variable control shown in the table below:

Assy	VR
Y DRIVE Assy	VR2001

A

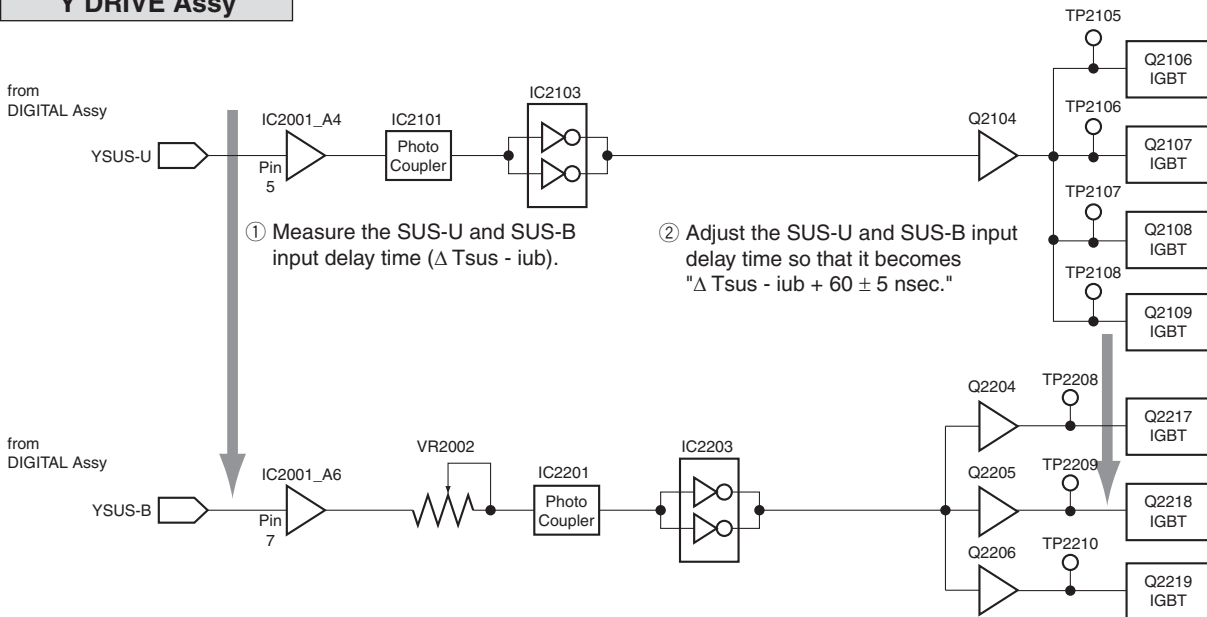
SUS-B ADJUSTMENT

X DRIVE Assy



C

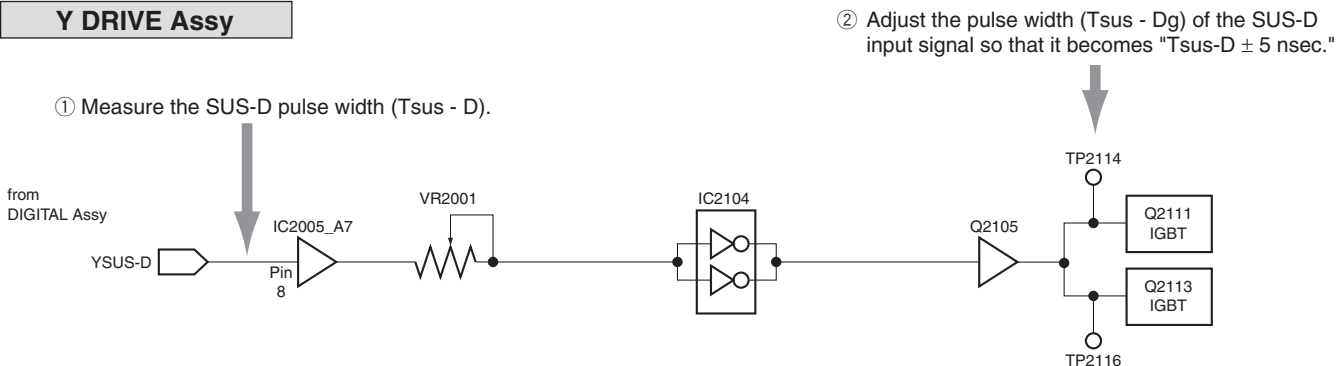
Y DRIVE Assy



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SUS-D ADJUSTMENT

Y DRIVE Assy



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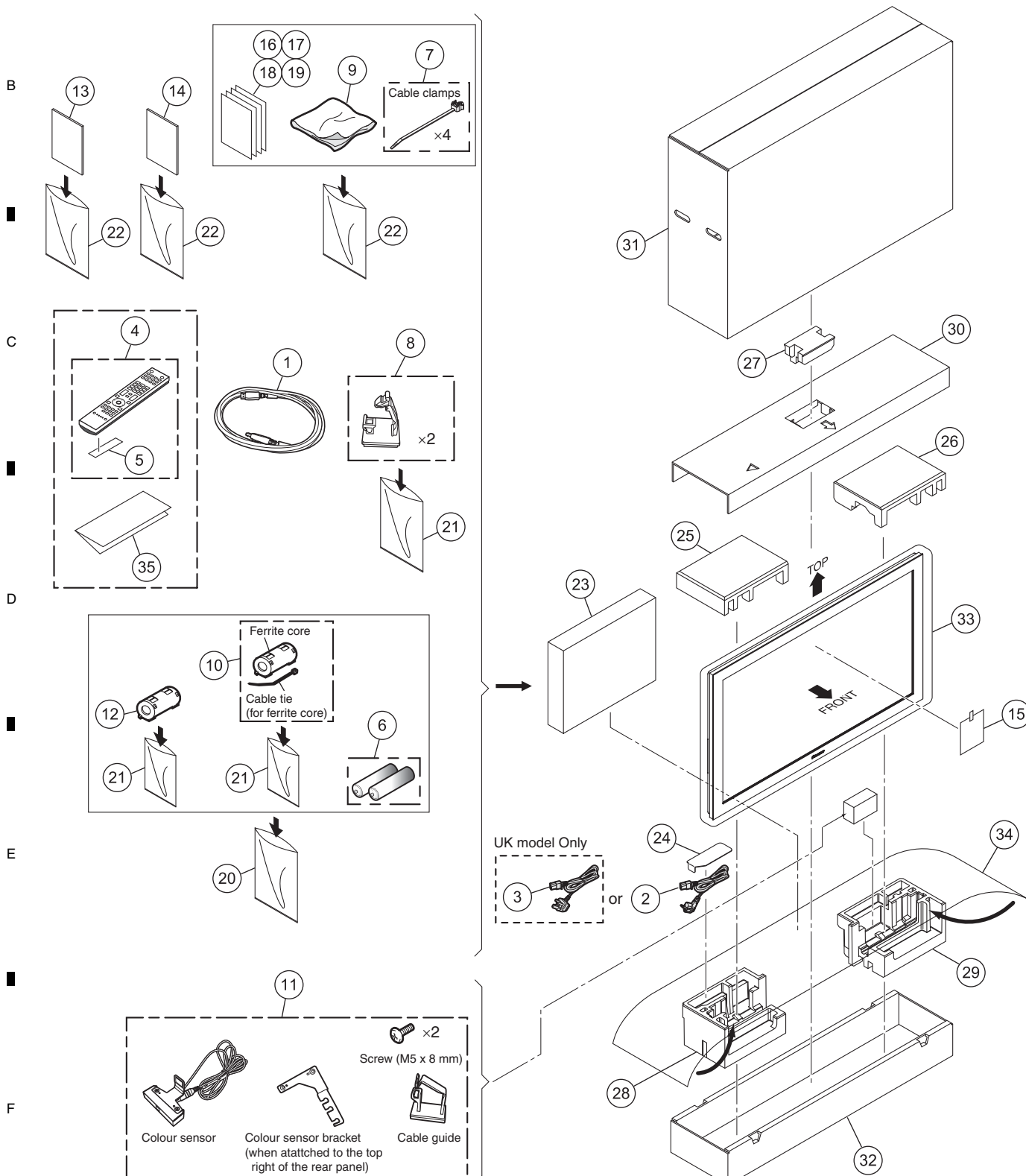
KRP-500P

9. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.

- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▼ mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual.
(In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION (KRP-500P/WYSIXK5)



PACKING SECTION PARTS LIST (KRP-500P/WYSIXK5)

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	
⚠	1	System Cable (2.9 m)	ADF1041	
⚠	2	Power Cable	ADG1214	A
⚠	3	Power Cable	ADG1223	
	4	Remote Control Unit	AXD1562	
	5	Battery Cover (Black)	AZN2784	
NSP	6	Alkaline Dry Cell Battery (LR6, AA)	VEM1045	
	7	Binder Assy	AEC2158	
	8	Cable Guide	AEC2167	
	9	Cleaning Cloth	AED1285	
⚠	10	Ferrite Core (L5313)	ATX1039	B
	11	Color Sensor Module	AXF1196	
	12	Ferrite Core (L5320)	CTX1089	
	13	Operating Instructions (Italian / Dutch / Spanish / Russian)	ARC1609	
	14	Operating Instructions (English / French / German)	ARE1494	
	15	Caution Card	ARM1310	
	16	Cleaning Caution PTK	ARM1311	
	17	Ferrite Core Info.	ARM1396	C
	18	Block Diagram (500P)	ARY1216	
NSP	19	Warranty Card EU	ARY7129	
NSP	20	Vinyl Pouch	AHG-195	
	21	Vinyl Bag	AHG1337	
NSP	22	Vinyl Bag	AHG1340	
	23	Accessory Box	AHC1122	
	24	Power Cord Lid (50M E)	AHC1127	
	25	Pad (5095E T-L)	AHA2767	
	26	Pad (5095E T-R)	AHA2768	D
	27	Pad (5095E T-C)	AHA2769	
	28	Pad (5095E B-L)	AHA2770	
	29	Pad (5095E B-R)	AHA2771	
	30	Carton Board (50M EU)	AHB1317	
	31	Upper Carton (50P EU)	AHD3733	
	32	Under Carton (5090)	AHD3672	
	33	Mirror Mat	AHG1284	
	34	HD Sheet	AHG1416	
NSP	35	Power Button Info.	ARM1428	E

9.2 PACKING SECTION (KRP-500P/WYS5)

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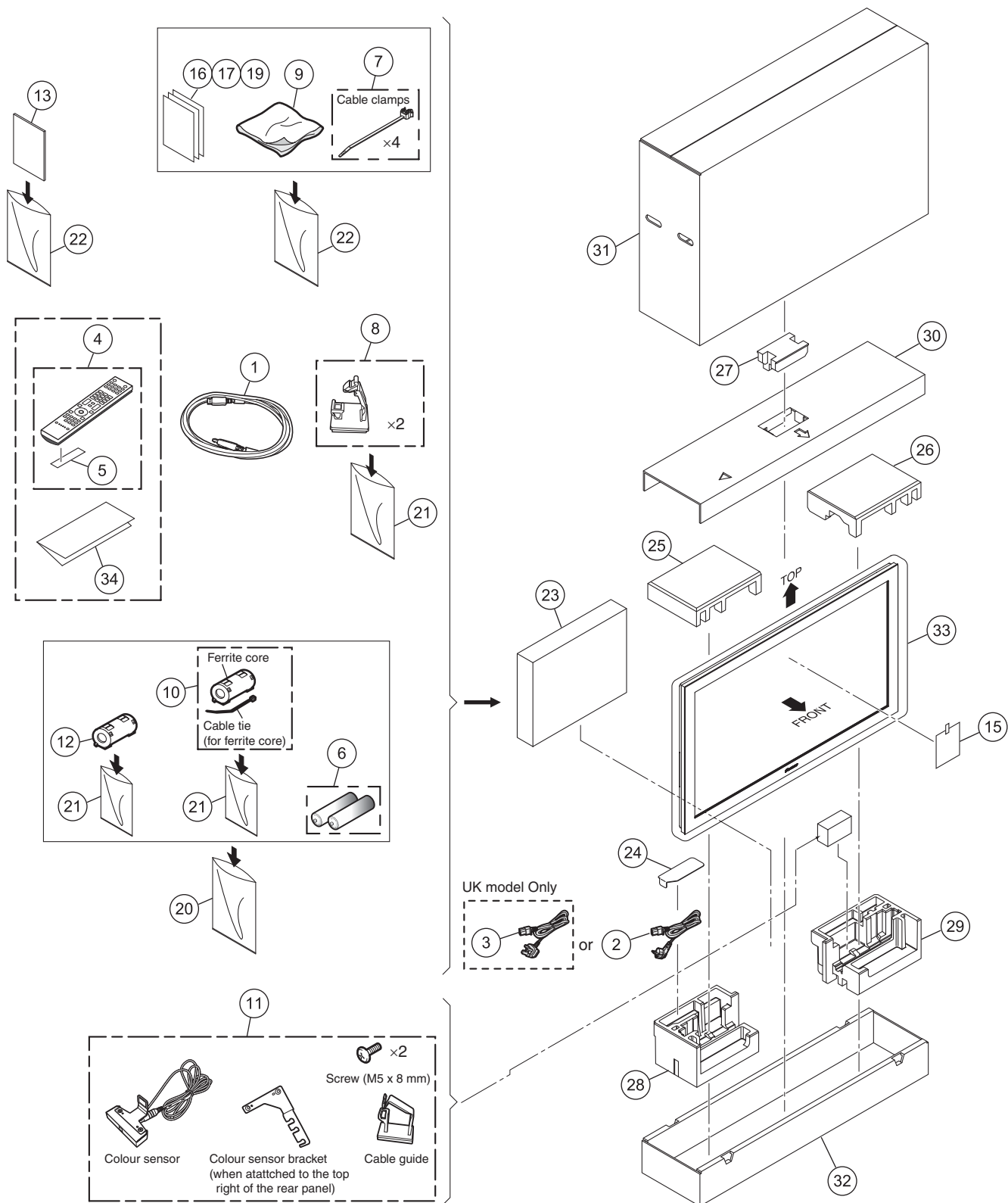
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PACKING SECTION PARTS LIST (KRP-500P/WYS5)

Mark	No.	Description	Part No.	
⚠	1	System Cable (2.9 m)	ADF1041	
⚠	2	Power Cable	ADG1214	A
⚠	3	Power Cable	ADG1223	
	4	Remote Control Unit	AXD1562	
	5	Battery Cover (Black)	AZN2784	
NSP	6	Alkaline Dry Cell Battery (LR6, AA)	VEM1045	
	7	Binder Assy	AEC2158	
	8	Cable Guide	AEC2167	
	9	Cleaning Cloth	AED1285	
⚠	10	Ferrite Core (L5313)	ATX1039	B
	11	Color Sensor Module	AXF1196	
	12	Ferrite Core (L5320)	CTX1089	
	13	Operating Instructions (Russian)	ARC1619	
	14	•••••		
	15	Caution Card	ARM1232	
	16	Cleaning Caution 11L	ARM1283	
	17	Ferrite Core Info.	ARM1395	
	18	•••••		C
NSP	19	Warranty Card EU	ARY7127	
NSP	20	Vinyl Pouch	AHG-195	
	21	Vinyl Bag	AHG1337	
NSP	22	Vinyl Bag	AHG1340	
	23	Accessory Box	AHC1083	
	24	Power Cord Lid (50M G)	AHC1128	
	25	Pad (5095 T-L)	AHA2772	
	26	Pad (5095 T-R)	AHA2773	
	27	Pad (5095 T-C)	AHA2774	
	28	Pad (5095 B-L)	AHA2775	D
	29	Pad (5095 B-R)	AHA2776	
	30	Carton Board (50M JJ)	AHB1318	
	31	Upper Carton (50P EUJ)	AHD3734	
	32	Under Carton (5090)	AHD3673	
	33	Mirror Mat	AHG1284	
NSP	34	Power Button Info.	ARM1429	E

9.3 PACKING SECTION (KRP-500P/LFT)

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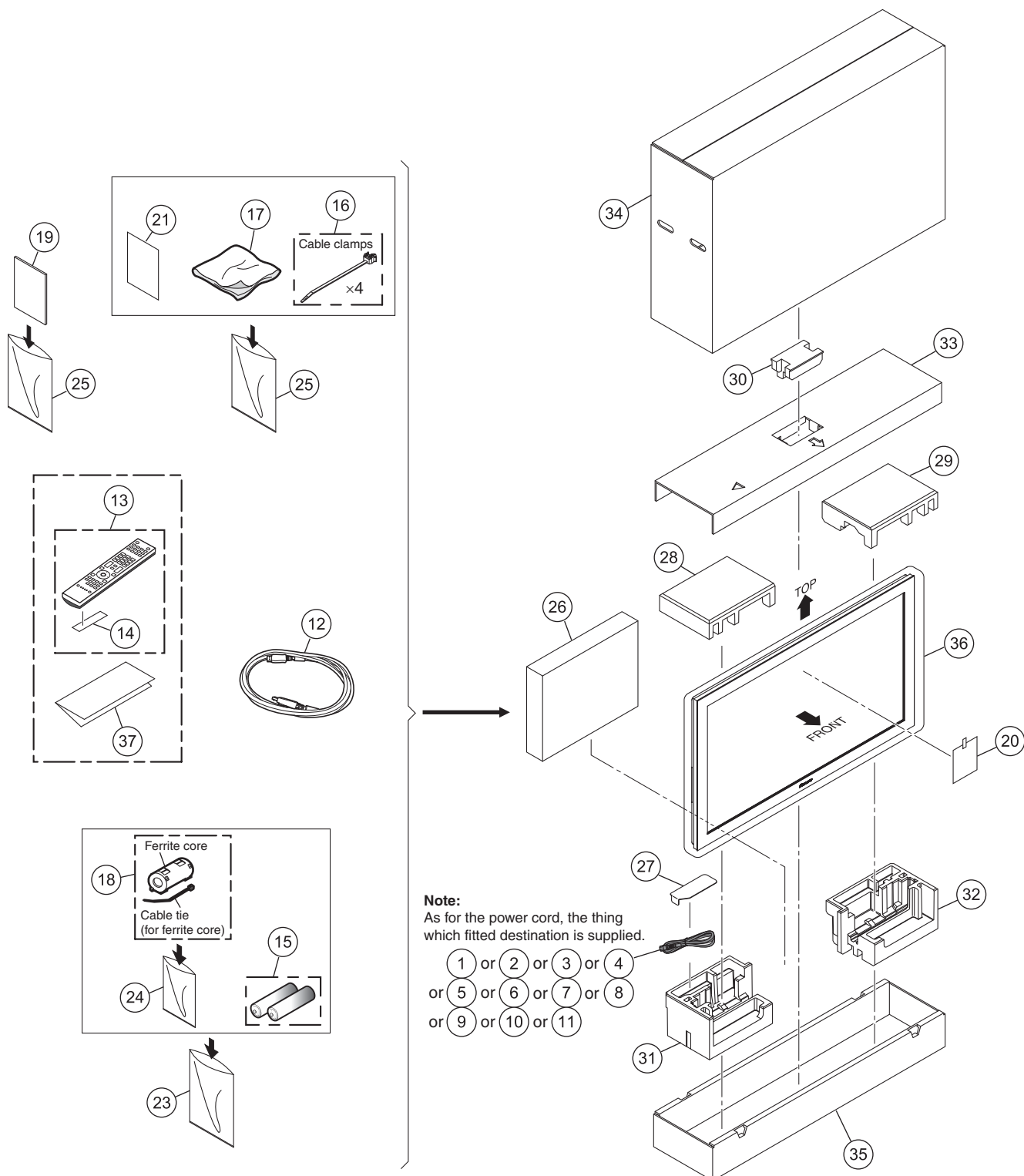
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PACKING SECTION PARTS LIST (KRP-500P/WA5)

Mark	No.	Description	Part No.	
⚠	1	System Cable (2.9 m)	ADF1041	
⚠	2	AC Power Cord	ADG1209	A
	3	•••••		
	4	Remote Control Unit	AXD1569	
	5	Battery Cover (Black)	AZN2784	
NSP	6	Dry Cell Battery (R6, AA)	VEM1031	■
	7	Binder Assy	AEC2158	
	8	•••••		
	9	Cleaning Cloth	AED1285	
⚠	10	Ferrite Core (L5321)	ATX1039	
	11	•••••		B
	12	•••••		
	13	Operating Instructions (Simp-Chinese)	ARC1610	
	14	•••••		■
	15	Caution Card (PC)	ARM1302	
	16	Cleaning Caution 11L	ARM1283	
	17	•••••		
	18	•••••		
NSP	19	Warranty Card	ARY1161	C
	20	•••••		
	21	Vinyl Bag	AHG1336	
NSP	22	Vinyl Bag	AHG1340	
	23	Accessory Box	AHC1083	■
	24	•••••		
	25	Pad (5095 T-L)	AHA2772	
	26	Pad (5095 T-R)	AHA2773	
	27	Pad (5095 T-C)	AHA2774	
	28	Pad (5095 B-L)	AHA2775	D
	29	Pad (5095 B-R)	AHA2776	
	30	Carton Board (50M JJ)	AHB1318	
	31	Upper Carton (50P C)	AHD3737	
	32	Under Carton (5090)	AHD3673	■
	33	Mirror Mat	AHG1284	
	34	Nylon Binder	AEC-093	
NSP	35	Power Button Info.	ARM1431	E

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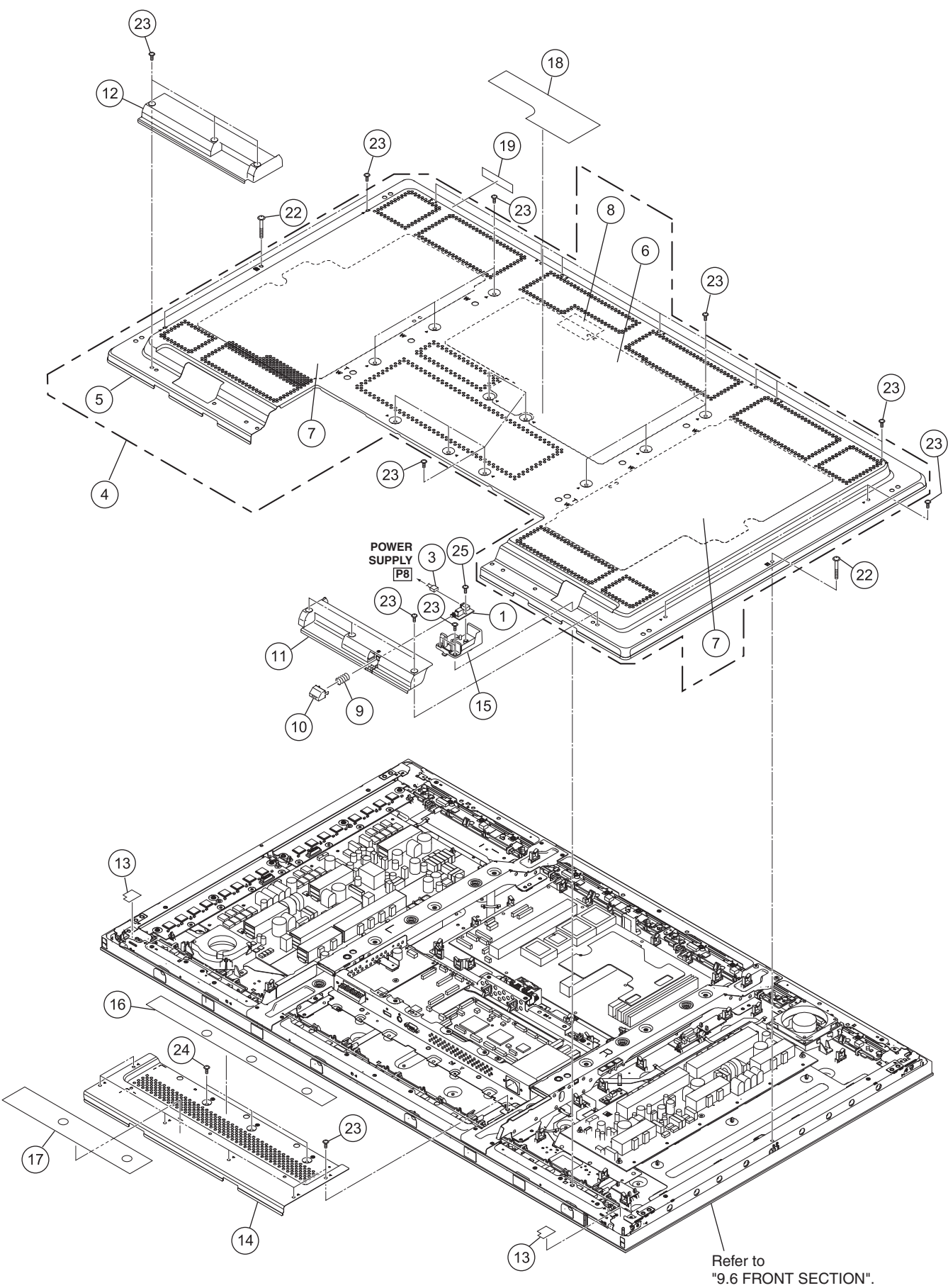
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(1) REAR SECTION PARTS LIST

Mark	No.	Description	Part No.	
	1	POW SW Assy	AWW1395	
	2	•••••		A
	3	3P Housing Wire (J103)	ADX3683	
	4	Rear Case Service Assy	ANE1690	
NSP	5	Rear Case (509M)	ANE1682	
⚠ NSP	6	Rear Case Sheet A 509	AMR3922	
⚠ NSP	7	Rear Case Sheet B 509	AMR3923	
⚠ NSP	8	Rear Shield (509M)	ANK1997	
	9	Coil Spring	ABH1125	
	10	Power Button	AAD4162	
	11	Under Grip R (50F)	AMR3897	B
	12	Under Grip LS (50F)	AMR3899	
	13	Sensor Cushion B (428)	AEB1486	
	14	Under Cover (509M)	ANE1683	
	15	Power Button Support	AMR3840	
	16	Terminal Label	See Contrast table (2)	
NSP	17	Name Label	See Contrast table (2)	
	18	Caution Label	See Contrast table (2)	
	19	Serial Sheet	AAX3143	
	20	•••••		C
	21	•••••		
	22	Screw (3 x 25 P)	ABA1380	
	23	N Grip Screw (M3 x 6)	ABA1381	
	24	Screw (B3 x 8)	ABA1389	
	25	Screw	APZ30P080FTB	

(2) CONTRAST TABLE

KRP-500P/WYSIXK5, WYS5, LFT and WA5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-500P /WYSIXK5	KRP-500P /WYS5	KRP-500P /LFT	KRP-500P /WA5	
	16	Terminal Label 50S-EU	AAX3607	AAX3607	Not used	Not used	
	16	Terminal Label 50S-G	Not used	Not used	AAX3633	Not used	
	16	Terminal Label 50S-CH	Not used	Not used	Not used	AAX3608	
NSP	17	Name Label (50P-EU)	AAL3074	Not used	Not used	Not used	
NSP	17	Name Label (50P-EUJ)	Not used	AAL3075	Not used	Not used	
NSP	17	Name Label (50P-G)	Not used	Not used	AAL3076	Not used	
NSP	17	Name Label (50P-C)	Not used	Not used	Not used	AAL3078	E
	18	Caution Label 50M-EU	AAX3620	AAX3620	AAX3620	Not used	
	18	Caution Label (50P-C)	Not used	Not used	Not used	AAX3622	

1 2 3 4

9.6 FRONT SECTION

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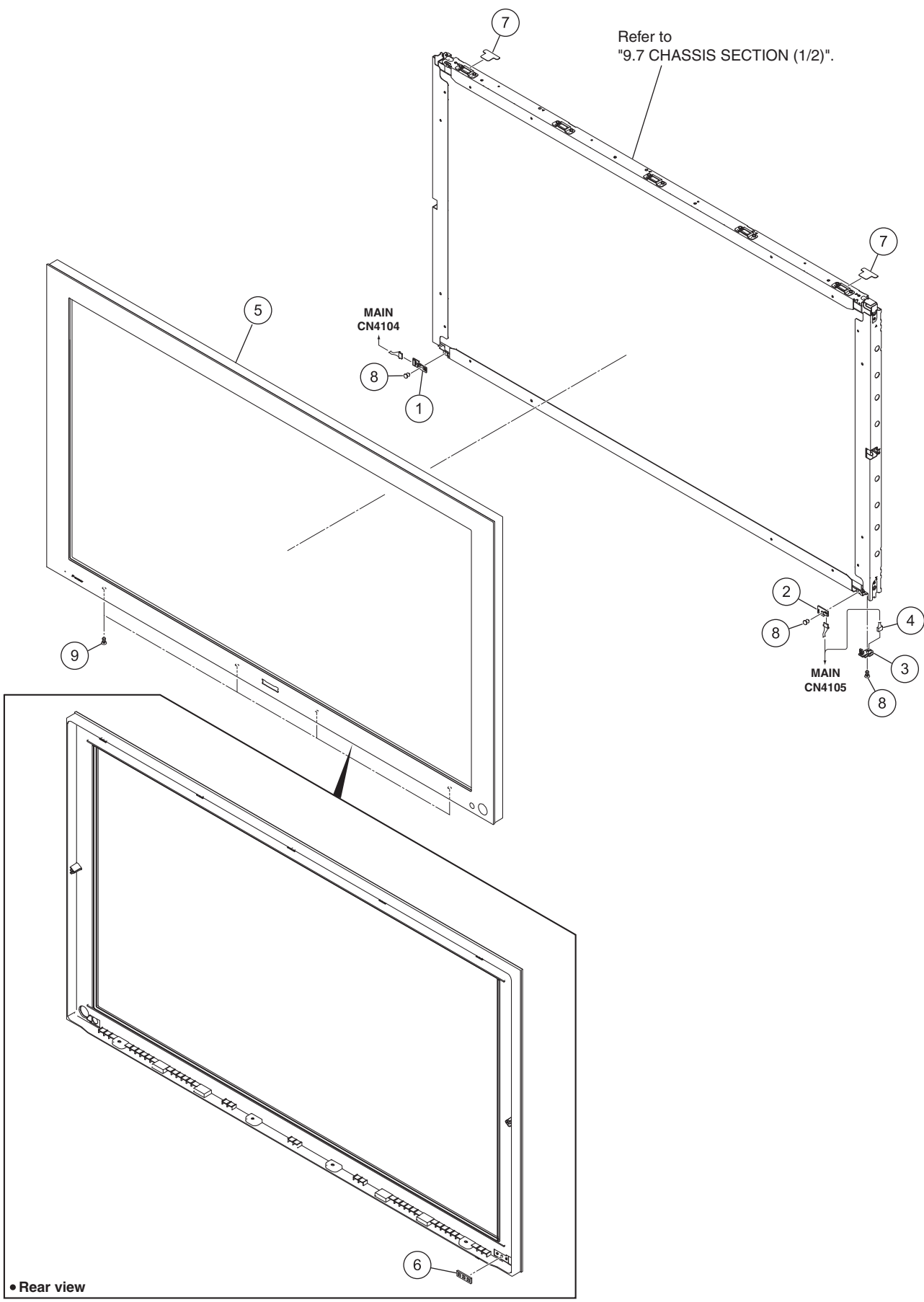
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FRONT SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	LED Assy	AWW1399
2	RLS Assy	AWW1401
3	IR Assy	AWW1400
4	6/3/3P Housing Wire (J117)	ADX3712
5	F-Case Assy (500SEP)	AMB3108
6	Blind Cushion (508F)	AEB1479
7	FC Gate Sheet	AMR3906
8	Nylon Rivet	AEC1671
9	Rivet (Plastic)	AEC1877

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9.7 CHASSIS SECTION (1/2)



Cleaning paper :
GED-008

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Refer to
"9.10 MULTIBASE SECTION".

Refer to
"9.8 CHASSIS SECTION (2/2)".

CHASSIS SECTION (1/2) PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
⚠	1	DC FAN Motor 80 x 15L	AXM1065
⚠	2	DC FAN Motor 75 x 12T	AXM1066
⚠	3	DC FAN Motor 40 x 10L	AXM1067
	4	Sub Frame L Assy (509)	ANA2202
	5	Sub Frame R Assy (509)	ANA2205
⚠	6	F. Chassis V (509M)	ANA2208
⚠	7	F. Chassis HT Assy 509	ANA2212
⚠	8	F. Chassis HB Assy 509	ANA2210
	9	Reuse Wire Saddle	AEC2134
	10	Slide Clamp	AEC2166
	11	FAN Bracket	AMR3805
	12	Drive Wire Saddle	AMR3850
	13	FAN Bracket HP	AMR3862
	14	Rear Case Support	AMR3873
	15	Sub Frame Sheet (509M)	AMR3888
	16	Support Bracket 509M	AMR3896
	17	FAN Bracket P	AMR3901
⚠	18	Front Gasket V50	ANK1963
⚠	19	Front Gasket H50	ANK1964
NSP	20	FAN Plate	ANG3221
	21	Wire Clip	AEC1948
	22	Screw	ABA1351
	23	N Grip Screw (M3 x 6)	ABA1381
	24	Screw (B3 x 12)	ABA1395
	25	Screw	ABZ30P080FTC
	26	Screw	APZ30P080FTB
	27	Screw	BPZ30P080FTB
	28	Screw	BPZ30P160FTB
	29	Screw	PPZ50P100FTB
	30	Screw	TBZ40P060FTC

9.8 CHASSIS SECTION (2/2)

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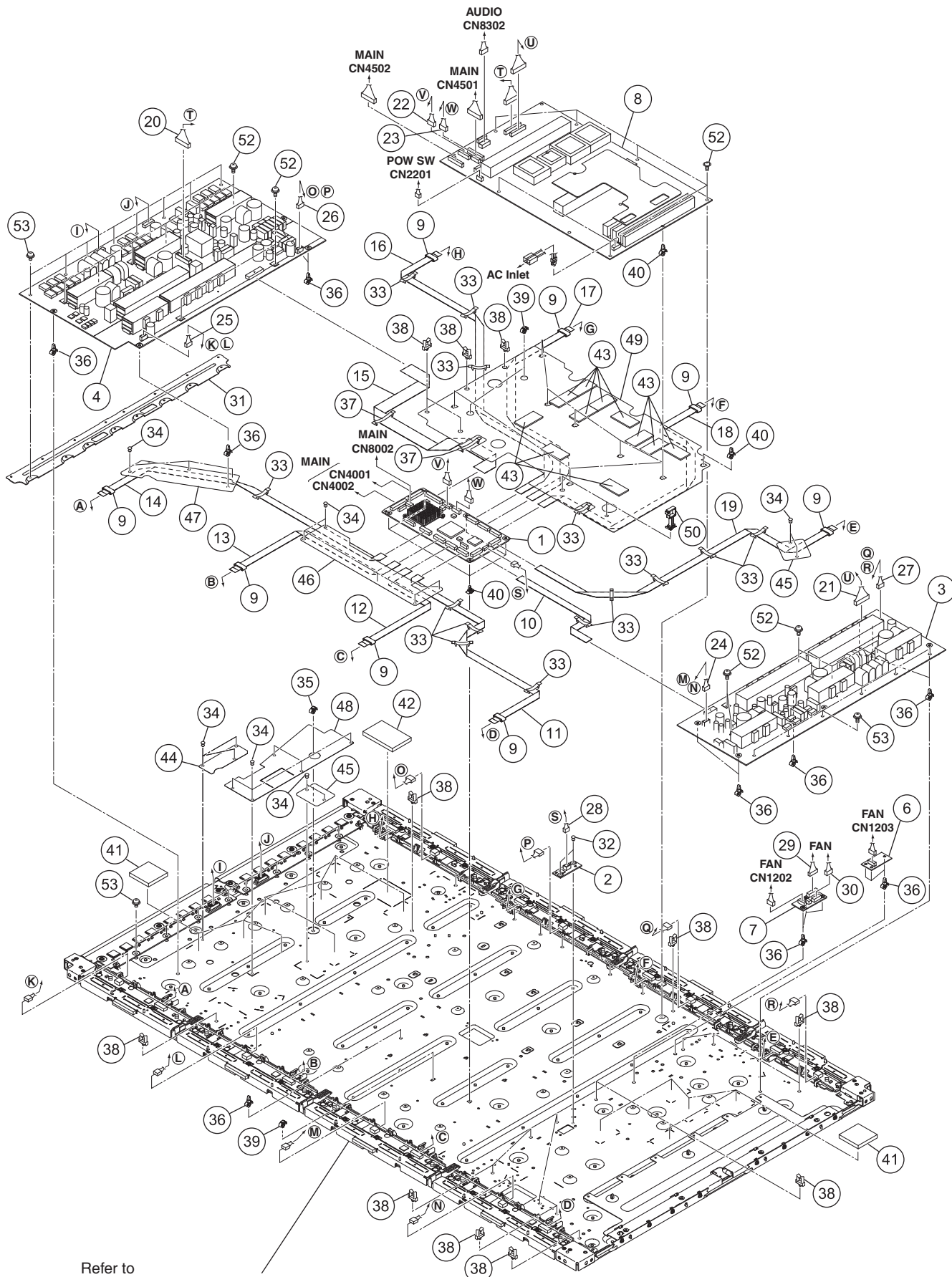
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Refer to
"9.9 PANEL CHASSIS SECTION".

CHASSIS SECTION (2/2) PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	50F DIGITAL Assy	AWW1368	46	DIGITAL Sheet	AMR3822	
2	SENSOR Assy	AWW1340	47	Drive Sheet	AMR3829	A
3	50F X DRIVE Assy	AWV2599	48	Y Drive Sheet A (M)	AMR3881	
4	50F Y DRIVE Assy	AWV2600	⚠ 49	Power Sheet	AMR3902	
5	•••••		50	Reuse Fastener	AEC2133	
6	SENS Assy	AWW1396	51	•••••		
7	FAN CH Assy	AWW1397	52	Screw	ABA1351	
⚠ 8	POWER SUPPLY Unit	AXY1203	53	Screw	ABA1364	
⚠ 9	Ferrite Core (F1 - F8)	ATX1072				
10	Flexible Cable (J201)	ADD1572				
11	Flexible Cable (J202)	ADD1573				B
12	Flexible Cable (J203)	ADD1574				
13	Flexible Cable (J204)	ADD1575				
14	Flexible Cable (J205)	ADD1576				
15	Flexible Cable (J206)	ADD1577				
16	Flexible Cable (J207)	ADD1578				
17	Flexible Cable (J208)	ADD1579				
18	Flexible Cable (J209)	ADD1580				
19	Flexible Cable (J210)	ADD1581				
20	12P/11P Housing Wire (J101)	ADX3677				C
21	11P Housing Wire (J102)	ADX3678				
22	10P Housing Wire (J106)	ADX3680				
23	6P Housing Wire (J107)	ADX3684				
24	5/3/3P Housing Wire (J112)	ADX3686				
25	5/3/3P Housing Wire (J113)	ADX3687				
26	5/3/3P Housing Wire (J114)	ADX3688				
27	5/3/3P Housing Wire (J115)	ADX3689				
28	5P Housing Wire (J108)	ADX3690				
29	9/3/3P Housing Wire (J130)	ADX3691				D
30	7/3/3P Housing Wire (J131)	ADX3692				
31	Plate Y (509)	ANG3127				
32	Nylon Rivet	AEC1671				
33	Flat Clamp	AEC2132				
34	Nylon Rivet	AEC2089				
35	Reuse Card Spacer	AEC2117				
36	PCB Spacer (Reuse)	AEC2122				
37	Flat Clamp	AEC1879				
38	Reuse Wire Saddle	AEC2134				E
39	Reuse Card Spacer S	AEC2153				
40	Reuse PCB Spacer 4.5B	AEC2161				
41	Drive Sheet	AEH1155				
42	Drive Sheet Y	AEH1186				
43	Power Silicon Sheet	AEH1187				
44	Y Drive Sheet B	AMR3769				
45	FAN Sheet	AMR3786				F

9.9 PANEL CHASSIS SECTION

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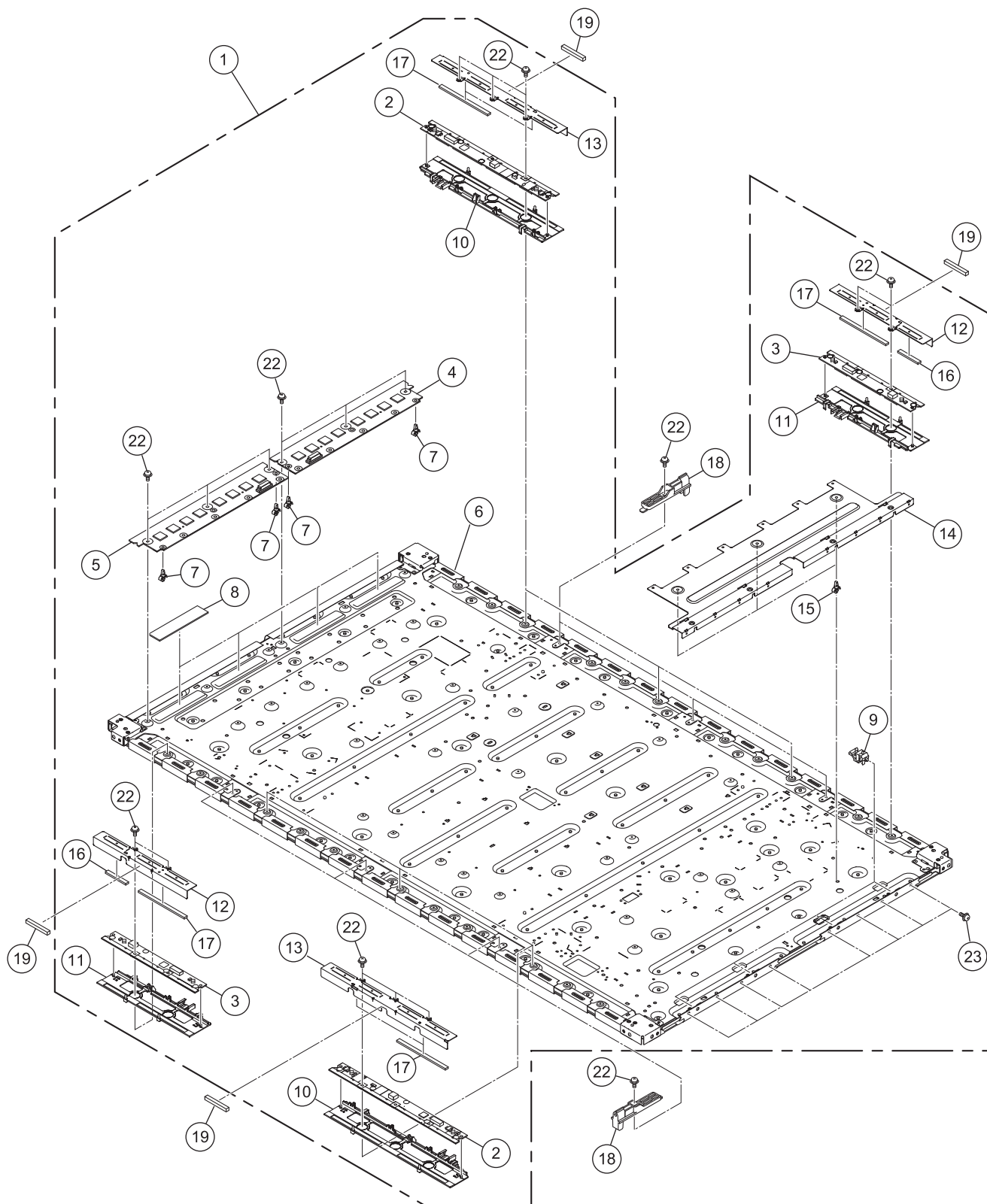
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(1) PANEL CHASSIS SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
NSP 1	P. Chassis Assy	See Contrast table (2)
NSP 2	50F ADDRESS L Assy	AWW1348
NSP 3	50F ADDRESS S Assy	AWW1349
NSP 4	50F SCAN A Assy	AWW1350
NSP 5	50F SCAN B Assy	AWW1351
NSP 6	P. Panel (50FE) Assy	AWU1349
7	Reuse PCB Spacer 4.5	AEC2148
8	Heat Radiation Sheet	AEH1134
9	Plate Holder	AMR3757
10	Holder L Assy (509)	AMR3775
11	Holder S Assy (509)	AMR3776
⚠ 12	Address Plate S (509)	ANG3129
⚠ 13	Address Plate L (509)	ANG3130
14	Plate X (509)	ANG3128
15	PCB Spacer (Reuse)	AEC2122
16	Address Silicon TS	AEH1160
17	Address Silicon TL	AEH1161
18	FC Holder	AMR3895
⚠ 19	Gasket ADH-FCH	ANK1850
20	.....
21	.....
22	Screw	ABA1351
23	Screw	ABA1364

(2) CONTRAST TABLE

KRP-500P/WYSIXK5, WYS5, LFT and WA5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-500P /WYSIXK5	KRP-500P /WYS5	KRP-500P /LFT	KRP-500P /WA5
NSP	1	P. Chassis (509FE) Assy	AWU1350	Not used	Not used	Not used
NSP	1	P. Chassis (509J) Assy	Not used	AWU1357	AWU1357	AWU1357

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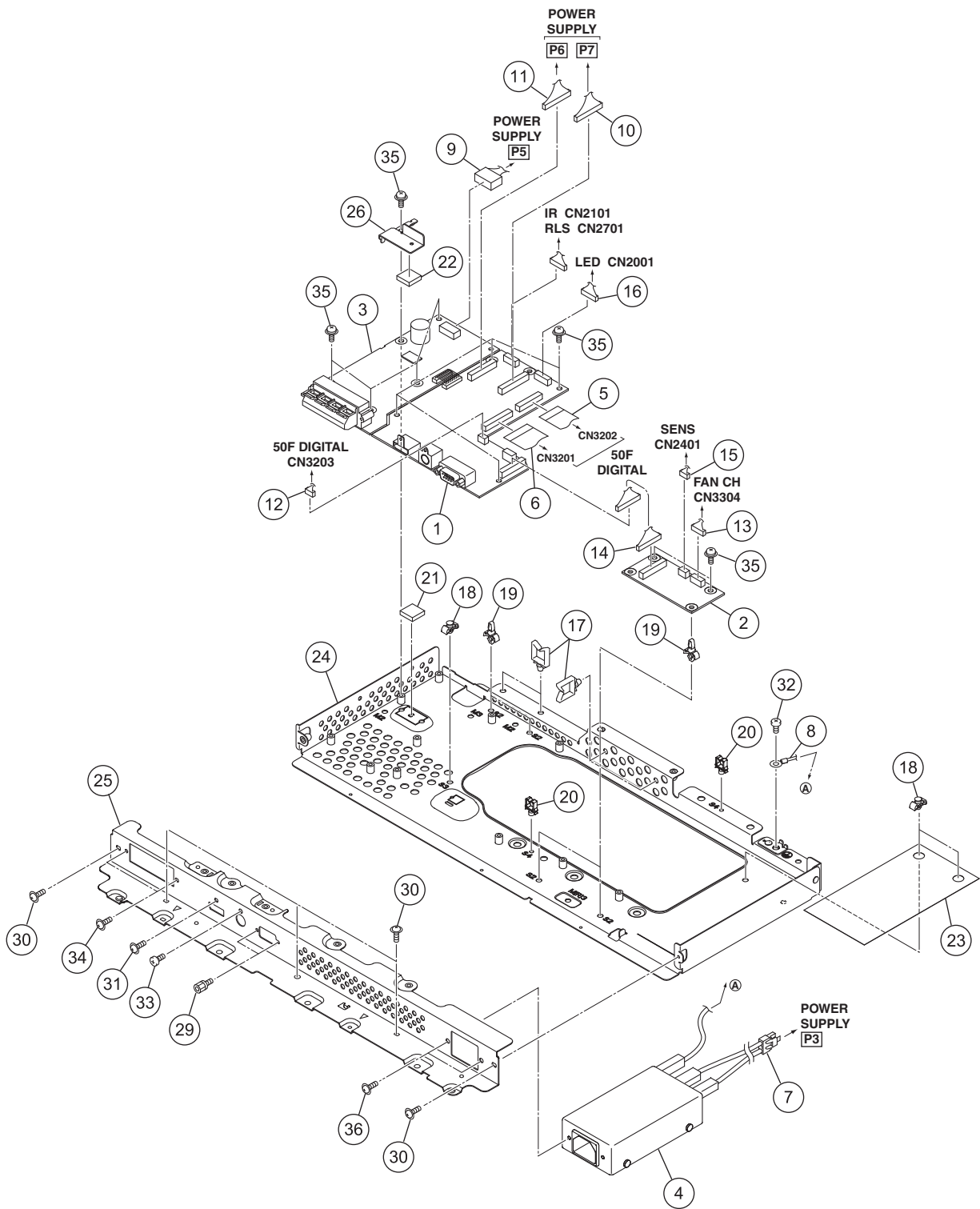
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(1) MULTIBASE SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN Assy	AWW1393		21	Silicon Sheet MTB A	AEH1174
	2	FAN Assy	AWW1394		22	Silicon Sheet	AEH1177
	3	AUDIO Assy	AWW1398	⚠	23	Inlet Shield (509M)	ANK1998
⚠	4	AC Inlet (CN1)	AKP1336		24	Multi Base Assy SEP	ANA2229
	5	Flexible Cable (J211)	ADD1582		25	Terminal Panel SEP	ANC2479
	6	Flexible Cable (J212)	ADD1583		26	AUDIO Heatsink	ANH1723
⚠	7	Housing Wire (J104)	ADX3679		27	•••••	
⚠	8	Housing Wire (J105)	ADX3651		28	•••••	
	9	5P Housing Wire (J111)	ADX3706		29	Hexagon Headed Screw	ABA1382
	10	15P Housing Wire (J110)	ADX3707		30	N Grip Screw (M3 x 6)	ABA1381
	11	14P Housing Wire (J109)	ADX3708		31	Screw	AMZ30P060FTB
	12	6P Housing Wire (J140)	ADX3700	⚠	32	Screw	BMP40P080FSN
	13	6P Housing Wire (J121)	ADX3709		33	Screw	BMZ30P060FTB
	14	13P Housing Wire (J133)	ADX3702		34	Screw	BPZ30P080FTB
	15	3P Housing Wire (J134)	ADX3710		35	Screw	PMB30P060FNI
	16	7/6P Housing Wire (J116)	ADX3711		36	Screw	See Contrast table (2)
	17	Wire Saddle	AEC1745				
	18	PCB Support	AEC1938				
	19	PCB Spacer (Reuse)	AEC2087				
	20	Reuse Mini Saddle	AEC2160				

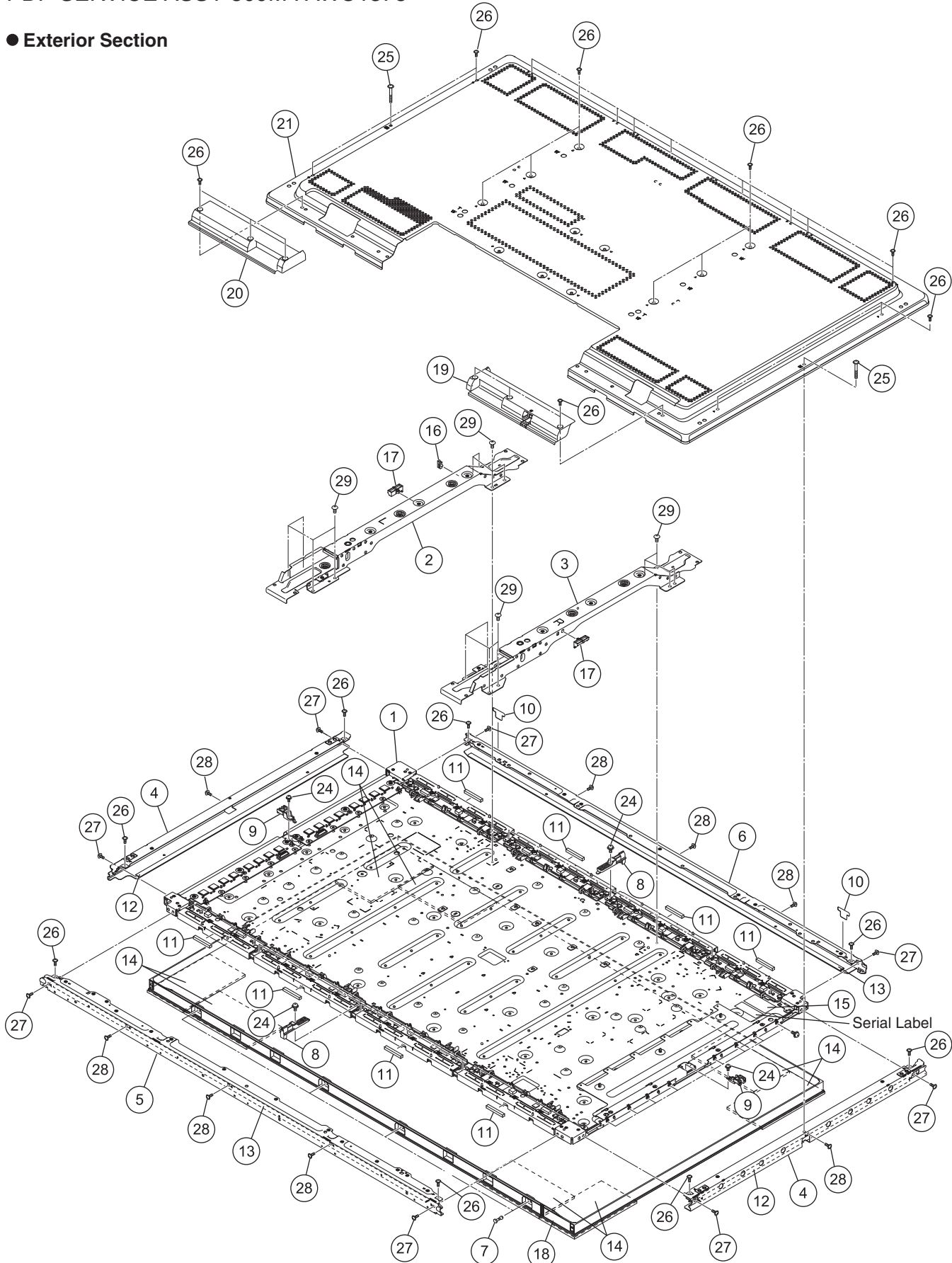
(2) CONTRAST TABLE
KRP-500P/WYSIXK5, WYS5, LFT and WA5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-500P /WYSIXK5	KRP-500P /WYS5	KRP-500P /LFT	KRP-500P /WA5
	36	Screw	Not used	AMZ30P060FTB	AMZ30P060FTB	AMZ30P060FTB
	36	N Grip Screw (M3 x 6)	ABA1381	Not used	Not used	Not used

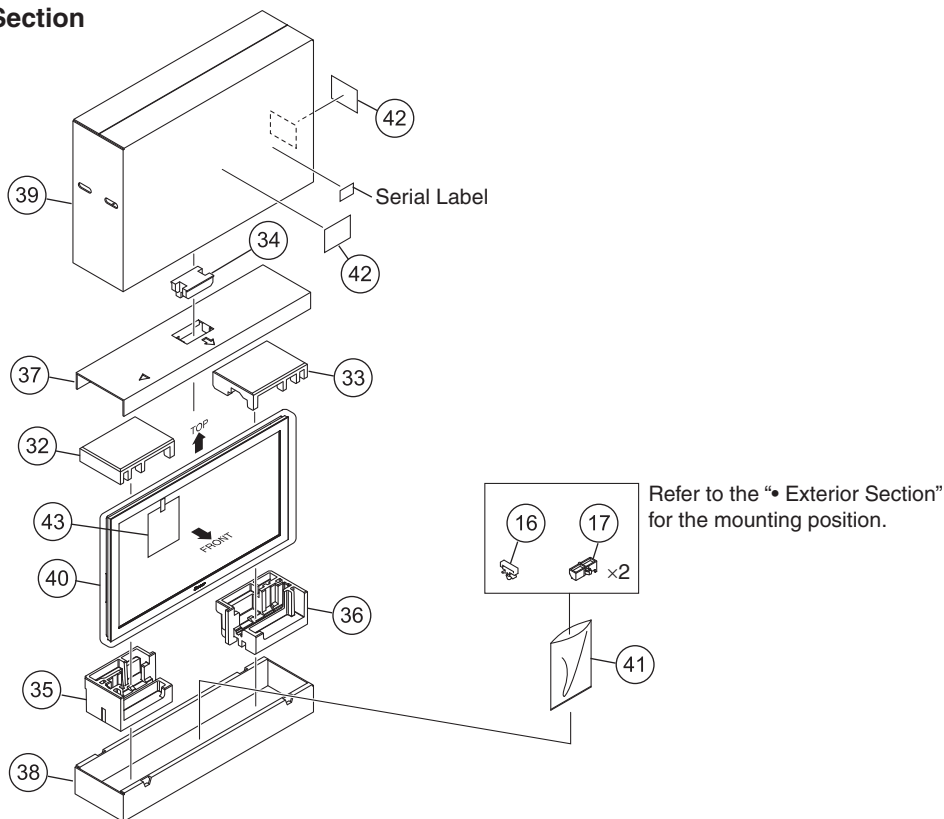
9.11 PDP SERVICE ASSY

PDP SERVICE ASSY 509M : AWU1378

● Exterior Section



● Packing Section



PDP SERVICE ASSY PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
NSP 1	P. Chassis (509J) Assy	AWU1357	26	N Grip Screw (M3 x 6)	ABA1381
2	Sub Frame L Assy (509)	ANA2202	27	Screw	ABZ30P080FTC
3	Sub Frame R Assy (509)	ANA2205	28	Screw	APZ30P080FTB
4	F. Chassis V (509M)	ANA2208	29	Screw	TBZ40P060FTC
5	F. Chassis HB Assy 509	ANA2210	30	.....
6	F. Chassis HT Assy 509	ANA2212	31	.....
7	Rivet (Plastic)	AEC1877	32	Pad (5095 T-L)	AHA2772
8	FC Holder	AMR3895	33	Pad (5095 T-R)	AHA2773
9	Support Bracket 509M	AMR3896	34	Pad (5095 T-C)	AHA2774
10	FC Gate Sheet	AMR3906	35	Pad (5095 B-L)	AHA2775
11	Gasket ADH-FCH	ANK1850	36	Pad (5095U B-R)	AHA2776
12	Front Gasket V50	ANK1963	37	Carton Board (50M JJ)	AHB1318
13	Front Gasket H50	ANK1964	38	Under Carton (5090)	AHD3673
14	Service Pad	AEC2105	39	Upper Carton (509F-SV)	AHD3716
NSP 15	Drive Voltage Label	ARW1097	40	Protect Sheet	AHG1331
16	Wire Clip	AEC1948	41	Vinyl Bag S	AHG1338
17	Drive Wire Saddle	AMR3850	42	Caution Label	AAX3031
NSP 18	Front Service Assy	AMB3103	NSP 43	Caution Sheet (9G)	ARM1398
19	Under Grip R (50F)	AMR3897			
20	Under Grip LS (50F)	AMR3899			
NSP 21	Rear Case (509M)	ANE1682			
22	.....			
23	.....			
24	Screw	ABA1351			
25	Screw (3 x 25 P)	ABA1380			

Service Manual



KRP-M01

ORDER NO.
ARP3508

MEDIA RECEIVER

KRP-M01

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-M01	WYSIXK5	AC 220 V to 240 V	
KRP-M01	WYSXJ5	AC 220 V to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
KRP-M01	ARP3509	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM, PCB PARTS LIST, etc.



For details, refer to "Important Check Points for good servicing".

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SAFETY INFORMATION

!

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

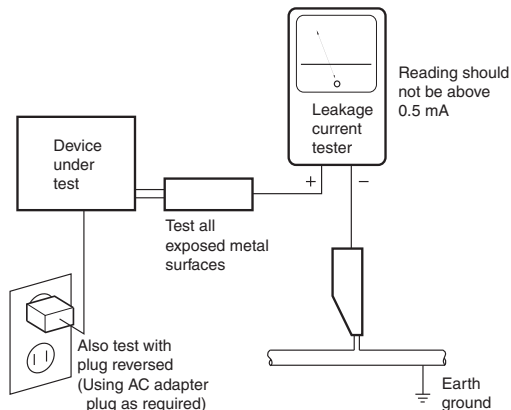
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120 V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

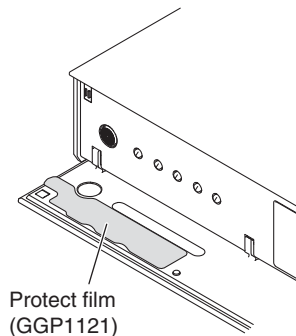
The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 NOTES SPECIFIC TO THIS PRODUCT

1. Notes before starting repair

- The high-gloss resin parts of the exterior of this product are easily scratched. During disassembly and reassembly of this product, be careful not to scratch the exterior.
- If the door of this product is pressed firmly from the front or when the KEY Assy and LED Assy are reassembled, print of the front-panel operating section may be transferred to the inside surface of the door. To avoid this, be sure to attach the protect film to the inside surface of the door before repairing. If protect film is not available, slip a cleaning cloth or the like inside the door for protection.
- Remove the attached protect film after product installation is completed. If the repaired product is to be delivered to the customer's home or a dealer, leave the protect film attached.



2. Note on Disassembly/Reassembly

1) Fixing screws for the HDMI connector and system cable connector

For tightening the screws for the HDMI connector and system cable connector, do not use an electric screwdriver. Tighten them manually. If they are tightened too forcefully with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be loosened/tightened any more.

2. SPECIFICATIONS

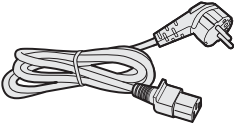
2.1 ACCESSORIES

A

• Power cable

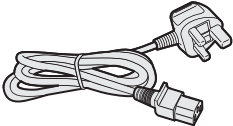
Only the power cable appropriate for your country or region is supplied:

(ADG1214)



For Europe, except UK and Republic of Ireland

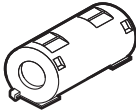
(ADG1223)




For UK and Republic of Ireland

WYSIXK5 only

• Ferrite core (ATX1039)



Ferrite core



Cable tie
(for ferrite core)

C

D

E

F

2.2 SPECIFICATIONS

Item			Media Receiver, model: KRP-M01
Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
TV Function (Analogue)	Receiving System		B/G, D/K, I, L, L'
	Tuner	VHF/UHF	E2–E69 ch, F1–F6 ch, I21–I69 ch, IR A–IR J ch
		CATV	Hyper-band, S1–S41 ch
	Auto Channel Preset		99 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		NICAM/A2
TV Function (Digital)	Receiving System		DVB-T(2K/8K COFDM)
	Tuner	VHF/UHF	VHF Band III (170 MHz to 230 MHz) and UHF Band IV, V (470 MHz to 862 MHz)
		Auto Channel Preset	999 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
TV Function (Satellite)	Receiving System		DVB-S, DVB-S2
	IF Tuner		950 MHz to 2150 MHz
	Auto Channel Preset		5000 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
Terminals	Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in ^{*1}
		INPUT 2	SCART (AV in/out, S-Video in, AV link ^{*2}), Component Video in, AUDIO in
		INPUT 3	SCART (AV in/out, S-Video in, RGB in, AV link ^{*2}), HDMI in ^{*1}
		INPUT 4	HDMI in ^{*1}
		CONTROL OUT	1
		SYSTEM CABLE	1
		Antenna	75 Ω Din Type for VHF/UHF in/SAT (Satellite) in
		AUDIO OUT	AUDIO out (Fixed)
		SUB WOOFER OUT	Variable
		DIGITAL OUT	Digital audio output (Optical)
		LAN (10/100)	1
	Front	INPUT 5	Video in, HDMI in ^{*1}
		PC INPUT	Analogue RGB
		INPUT 5/PC INPUT	Audio in
		USB	USB in ^{*3}
		PHONES	16 Ω to 32 Ω recommended
		COMMON INTERFACE	2, CA Module
		Power Requirements	220 V to 240 V AC, 50 Hz/60 Hz, 52 W (0.4 W Standby)
		Weight	4.5 kg (9.9 lbs)

*1 This conforms to HDMI 1.3 (Deep Colour) and HDCP1.1. HDMI (High-Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

*2 Switchable from menu.

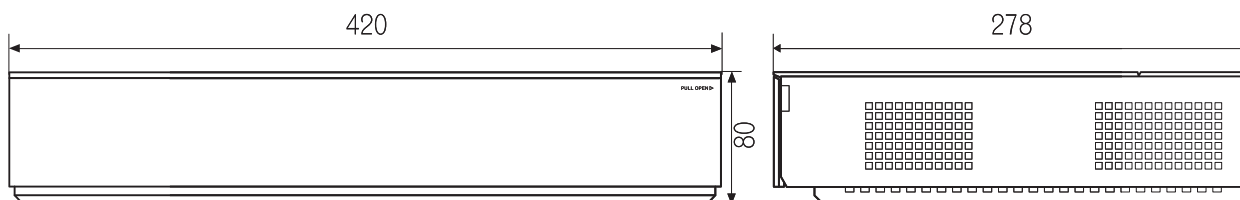
*3 This conforms to USB 1.1 and 2.0 specifications.

Design and specifications are subject to change without notice.

Dimensions (Media Receiver)

KRP-M01

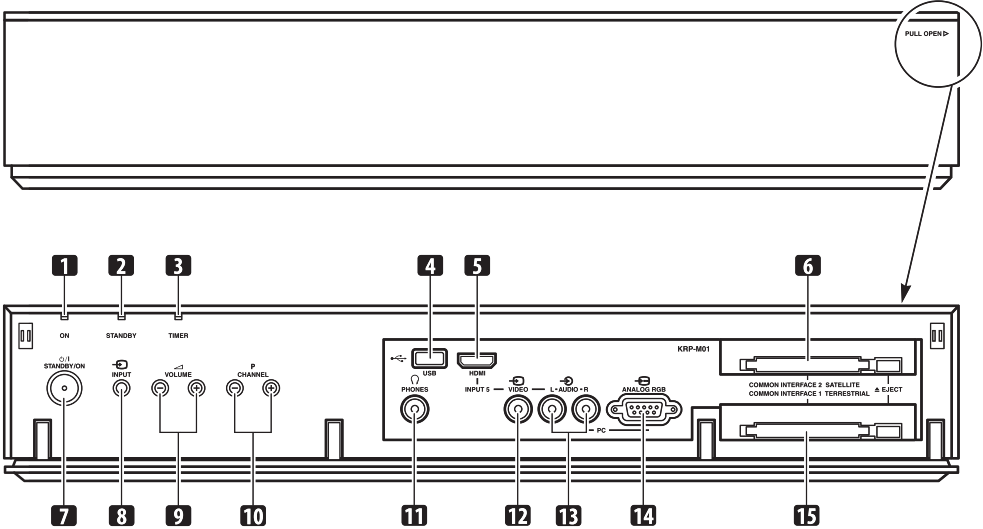
Unit: mm



KRP-M01

A

(Front)



- C

1

Power ON indicator

2

STANDBY indicator

3

TIMER indicator

4

USB port

5

INPUT 5 terminal (HDMI)

6

COMMON INTERFACE 2 SATELLITE slot

7

STANDBY/ON button

8

INPUT button
- 9

VOLUME Up/Down buttons

10

CHANNEL Up/Down buttons

11

PHONES output terminal

12

INPUT 5 terminal (Video)

13

INPUT 5/PC INPUT terminals (Audio)

14

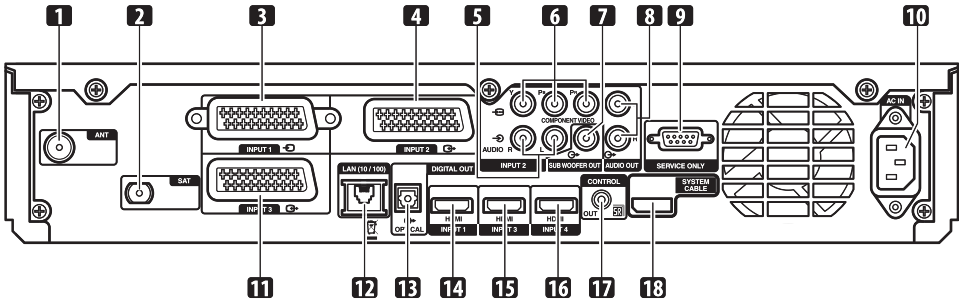
PC INPUT terminal (Analogue RGB)

15

COMMON INTERFACE 1 TERRESTRIAL slot

D

(Rear)



- E

1

ANT (Antenna) input terminal

2

SAT (Satellite) input terminal

3

INPUT 1 terminal (SCART)

4

INPUT 2 terminal (SCART)

5

INPUT 2 terminals (Audio)

6

INPUT 2 terminals (COMPONENT VIDEO: Y, P_B, P_R)

7

SUB WOOFER OUT terminal

8

AUDIO OUT terminals

9

RS-232C terminal (SERVICE ONLY)
(used for factory setup)
- 10

AC IN terminal

11

INPUT 3 terminal (SCART)

12

LAN (10/100) port

13

DIGITAL OUT terminal (OPTICAL)

14

INPUT 1 terminal (HDMI)

15

INPUT 3 terminal (HDMI)

16

INPUT 4 terminal (HDMI)

17

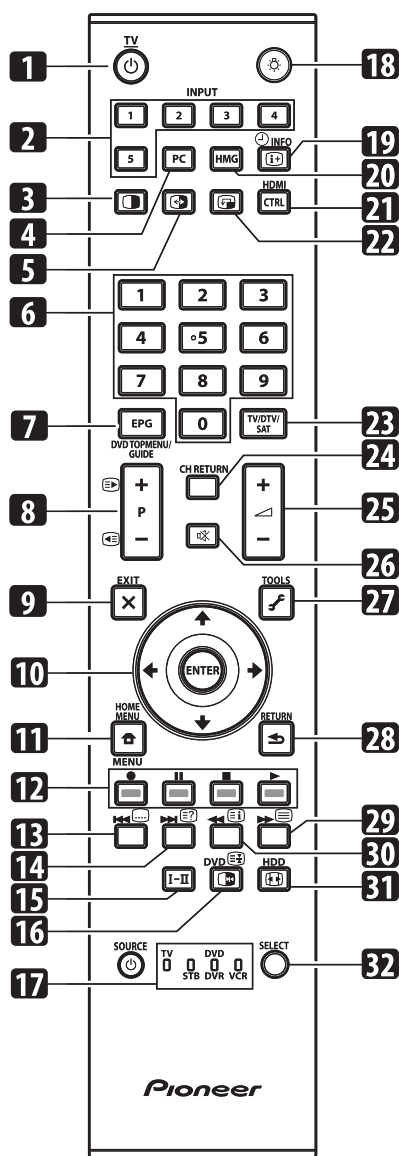
CONTROL OUT terminal

18

SYSTEM CABLE terminal

Remote Control Unit

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 **TV** : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the flat screen TV. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")
- 3 **SCREEN**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 4 **PC**: Selects the PC terminal as an input source.
- 5 **PI/P**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

- 6 **0 to 9**: TV/External input mode: Selects a channel. Teletext mode: Selects a page. Turns the power on when the STANDBY indicator lights red.
- 7 **EPG**: Displays the Electronic Programme Guide in DTV/SAT (Satellite) input mode.
- 8 **P+/P-**: TV/External input mode: Selects a channel. **TELETEXT**: Teletext mode: Selects a page.
- 9 **X EXIT**: Returns to the normal screen in one step.
- 10 **UP/DOWN/LEFT/RIGHT**: Selects a desired item on the setting screen. **ENTER**: Executes a command.
- 11 **HOME MENU**: Displays the HOME MENU screen.
- 12 **Colour (RED/GREEN/YELLOW/BLUE)**: Controls a BD player for HDMI Control functions only.
- 13 **TELETEXT**: Jumps to Teletext subtitle page. Turns subtitle on and off in DTV input mode depending on the broadcast.
- 14 **TELETEXT**: Displays hidden characters.
- 15 **I-II**: Sets the sound multiplex mode.
- 16 **TV/STB**: TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function. **TELETEXT**: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 17 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 18 **Light**: Lights up buttons. Lights turn off if no operations are performed within five seconds. This is used for remote control use in dark locations.
- 19 **INFO**: Displays the channel information. Displays the banner information.
- 20 **HMG (Home Media Gallery)**: Displays the Home Media Gallery screen.
- 21 **HDMI CTRL**: Displays the HDMI Control menu.
- 22 **Small Screen**: Moves the location of the small screen when in the picture-in-picture mode.
- 23 **TV/DTV/SAT**: Switches the mode among TV, DTV and SAT.
- 24 **CH RETURN**: Returns to the previous channel.
- 25 **+/-**: Sets the volume.
- 26 **Mute**: Mutes the sound.
- 27 **TOOLS**: Displays the TOOLS Menu.
- 28 **RETURN**: Restores the previous menu screen.
- 29 **Teletext**: Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 30 **Index**: Displays an Index page for the CEEFAX/FLOF format. Displays a TOP Over View page for the TOP format.
- 31 **Screen Size**: Selects the screen size.
- 32 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display panel.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

A

Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

B

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

C

D

Cleaning



Name	Part No.	Remarks
Cleaning paper	GED-008	Used to fan cleaning. Refer to “9.3 BOTTOM SECTION.”

E

F

3.2 QUICK REFERENCE

Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".

② Attaching screws for the HDMI and system cable terminals

When attaching the HDMI and system cable terminals after replacing the Assembly, secure the terminals manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD		SD	
No. of LEDs flashing	MR	Panel	No. of LEDs flashing
Red 1	MR_POWER	SQ_LSI	Blue 1
	Panel	Module Device communication	Blue 2
Red 2	POWER	DIGITAL-RST2	Blue 3
Red 3	SCAN	Panel temperature	Blue 4
Red 4	SCN-5V	Audio	Blue 5
Red 6	Y-DCDC	Module microcomputer communication	Blue 6
Red 7	Y-SUS		Blue 7
Red 8	ADRS		Blue 8
Red 10	X-DCDC	Panel main IIC communication	Blue 9
Red 11	X-SUS		Blue 10
Red 12	DIG-DCDC	FAN	Blue 11
Red 15	UNKNOWN	Unit high temperature	Blue 12
			Blue 13
		DC-IN	Blue 14
		Panel main EEPROM	Blue 15
			Blue 15

Special LED Patterns		Subcategory confirmation procedure	
Panel	MR	SD	SD Subcategory
PD (2-15) 	PD (1) 	If the DISPLAY key is pressed during shutdown, the orange LED flashes. (MR only)	
SD (1-15) 	SD (7-15) 		
System failure 	Standalone operation (MRMS01) 	8	1 Tuner 1
MR on standby (Red LED lit)	Rewriting of software (PC) 		2 MSP/MAP
Rewriting of software (PC) 	Rewriting of software (USB) 		3 AV Switch
NO BACKUP	After rewriting is completed successfully, the orange LED goes dark.		4 RGB Switch
	Rewriting of software failed (USB) 		5 Main VDEC
			6 VDEC-SDRAM
			7 AD/PLL
			8 HDMI
		9 Display Port Tx	
		13	1 RST2
			2 RST4
Commands for shifting between standalone and system operations		Other SD main categories have subcategories. For details, see 5.4[2].	
Panel	MR		
To Standalone operation: SYSS00	To Standalone operation: MRMS01		
To System operation: SYSS01	To System operation: MRMS00		
Note: After issuing a command, unplug then again plug in the AC power cord.			

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] two times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)

② MR section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] two times.)

③ Panel main section

Select {PANEL MAIN FACTORY} then {PM NG INFO}.
After entering Factory mode, press [MUTING] twice, then press [ENTER/SET].

3. How to display the Mask indication

① Mask indication in the panel side

- Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
- Press [ENTER/SET], then select a Mask indication, using [↑] or [↓].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. DIGITAL Assy (Panel): Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
- Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN BLOCK Assy (MR), MAIN Assy (Panel): Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
- Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit (Panel): Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

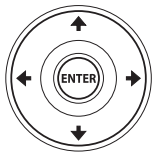
4. Other Assys (Panel): Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Up
↓
Down

- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [↑] or [↓].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER/SET]. To return to the next nested layer above, also press [ENTER/SET].

INFORMATION mode

1. VERSION (1)
2. VERSION (2)
3. VERSION (3)
4. MAIN NG
5. TEMPERATURE
6. HOUR METER
7. HDMI SIGNAL INFO 1
8. HDMI SIGNAL INFO 2
9. VDEC SIGNAL INFO 1
10. VDEC SIGNAL INFO 2



- #### INITIALIZE mode
1. SIDE MASK LEVEL
 2. FINAL SETUP
 3. DTB SERVICE MENU
 4. Wide XGA AUTO
 5. AUTO ADJUSTMENT



- #### OPTION mode
1. CH PRESET
 2. Digital AFT
 3. SYNC DET
 4. CTI



- #### PANEL MAIN FACTORY mode
1. PM NG INFO
 2. PM STATE INFO.
 3. DP_RX INFO.
 4. PM_SETUP



PANEL FACTORY mode

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL FUNCTION
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP



Structure of Layers in Service Factory Mode

INFORMATION mode

- 1. VERSION (1)
- 2. VERSION (2)
- 3. VERSION (3)
- 4. MAIN NG
- 4-1. CLEAR
- 5. TEMPERATURE
- 6. HOUR METER
- 7. HDMI SIGNAL INFO 1
- 8. HDMI SIGNAL INFO 2
- 9. VDEC SIGNAL INFO 1
- 10. VDEC SIGNAL INFO 2

The software versions for each microcomputer
The Flash memory versions for each device
The software versions for display microcomputer
The shutdown message ID/event times
(Going Clear mode by [ENTER/SET] key)
Select Yes by [→] key → pushing and hold [ENTER/SET] key
The temperature/FAN rotating status
The HOUR METER/P-COUNT information
The information of HDMI information files
The information of HDMI information files
The signal information of VDEC
The signal information of VDEC

PANEL FACTORY mode

Refer to [PANEL FACTORY MODE]

PANEL MAIN FACTORY mode

- 1. PM NG INFO.
- 2. PM STATE INFO.
- 3. DP_RX INFO.
- 4. PM_SETUP

Shutdown history of the panel main
The temperature/FAN rotating status/Room Light Sensor
Indication of the DPRx ID
Select the bezel color and clear the shutdown history of the panel main

OPTION mode

- 1. CH PRESET
- 2. Digital AFT
- 3. SYNC DET
- 4. CTI

For production line use
For production line use
For technical analysis
For technical analysis

INITIALIZE mode

- 1. SIDE MASK LEVEL
- 1-1. SIDE MASK LEVEL
- 2. FINAL SETUP
- 2-1. DATA RESET
- 3. DTB SERVICE MODE
- 3-1. MODE SHIFT
- 4. Wide XGA AUTO
- 5. AUTO ADJUSTMENT

For factory use
Set to Factory default settings (it should perform after replacing a MAIN Assy)
Information for the Digital Tuner Service Menu is displayed
For technical analysis

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ (+)
 1. VOL SUS
 2. VOL OFFSET
 -
 10. RESET1ST_KSB
 -
 25. SUS FREQ
6. PANEL-2 ADJ (+)
 1. R-HIGH
 2. G-HIGH
 -
 6. B-LOW
 7. ABL
7. PANEL FUNCTION (+)
 1. R-LEVEL
 -

Version indication of the panel
Indications of the accumulated power-on time and power-on count of the panel
Indication of the Power-down history
Indication of the Shutdown history

Settings required after replacement of the panel

Items for factory use

For AM noise prevention (Depending on the mode, brightness of the screen changes.)
For confirmation of the result of the setting change, the unit must be turned off then back on again.

For the WB adjustment of the panel and ABL adjustment.
A setting table is available for each signal frequency.

Items for factory use

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

8. ETC (+)
 1. BACKUP DATA
 2. DIGITAL EEPROM
 3. PD INFO.
 4. SD INFO.
 5. HR-MTR INFO.
 6. PM/B1-B5
 7. P COUNT INFO.
 8. MAX TEMP.
 9. MIRROR
 10. CLS
9. RASTER MASK SETUP (+)
 1. MASK OFF
 2. RST MASK 01
 -
10. PATTERN MASK SETUP (+)
 1. MASK OFF
 2. PTN MASK 01
 -
11. COMBI MASK SETUP (+)
 1. MASK OFF
 2. CMB MASK 01
 -

For transferring backup data (after replacement of the DIGITAL Assy)
Change the adjustment status of the DIGITAL Assy.

For clearance of data for the corresponding items.
The clearing method is the same: Select "CLEAR", then hold [ENTER/SET] pressed for at least 5 seconds.

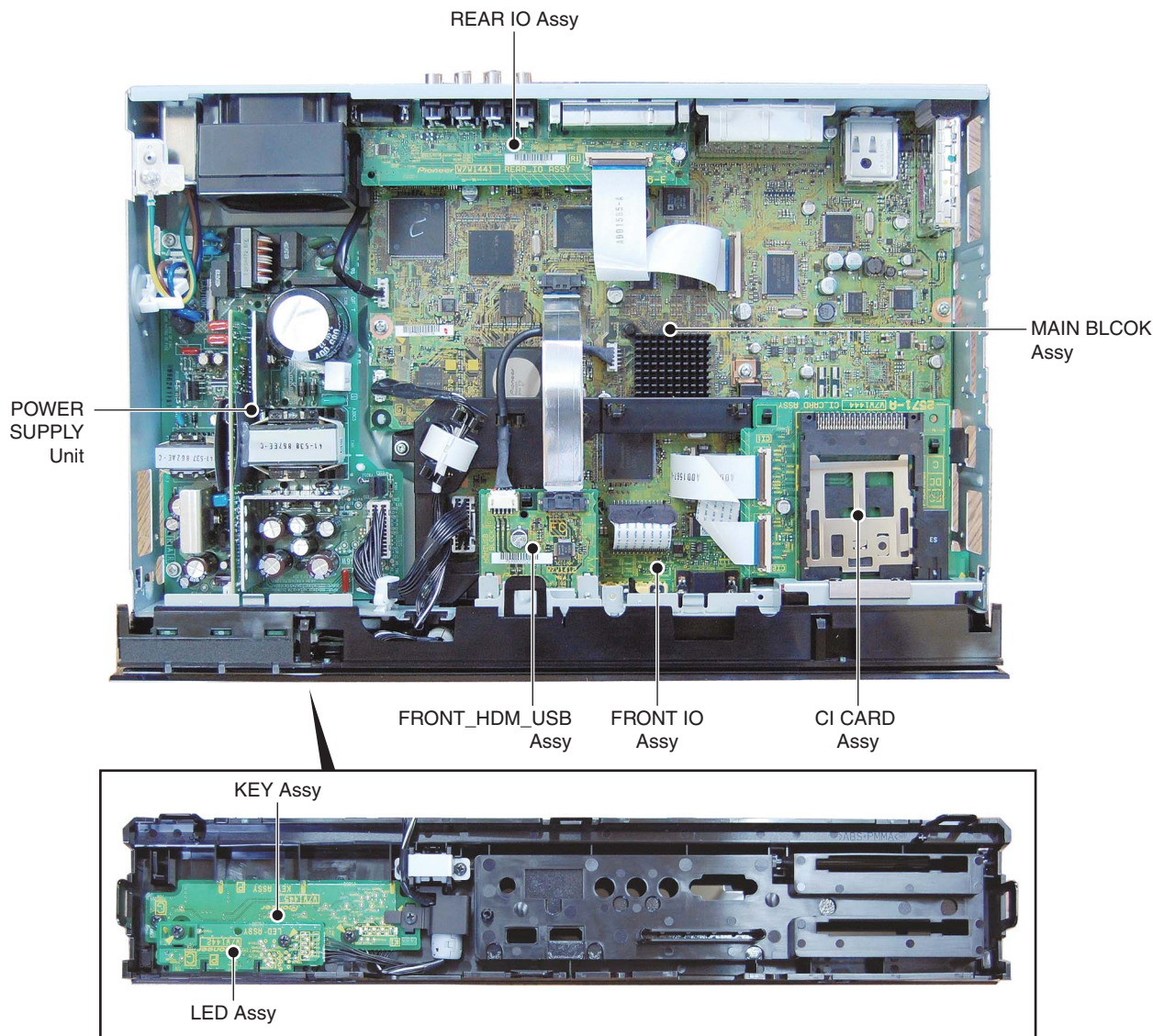
Switch the Mirror display mode.
Switch the function when checking the color sensor level.

For use while the Raster Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Pattern Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Combination Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

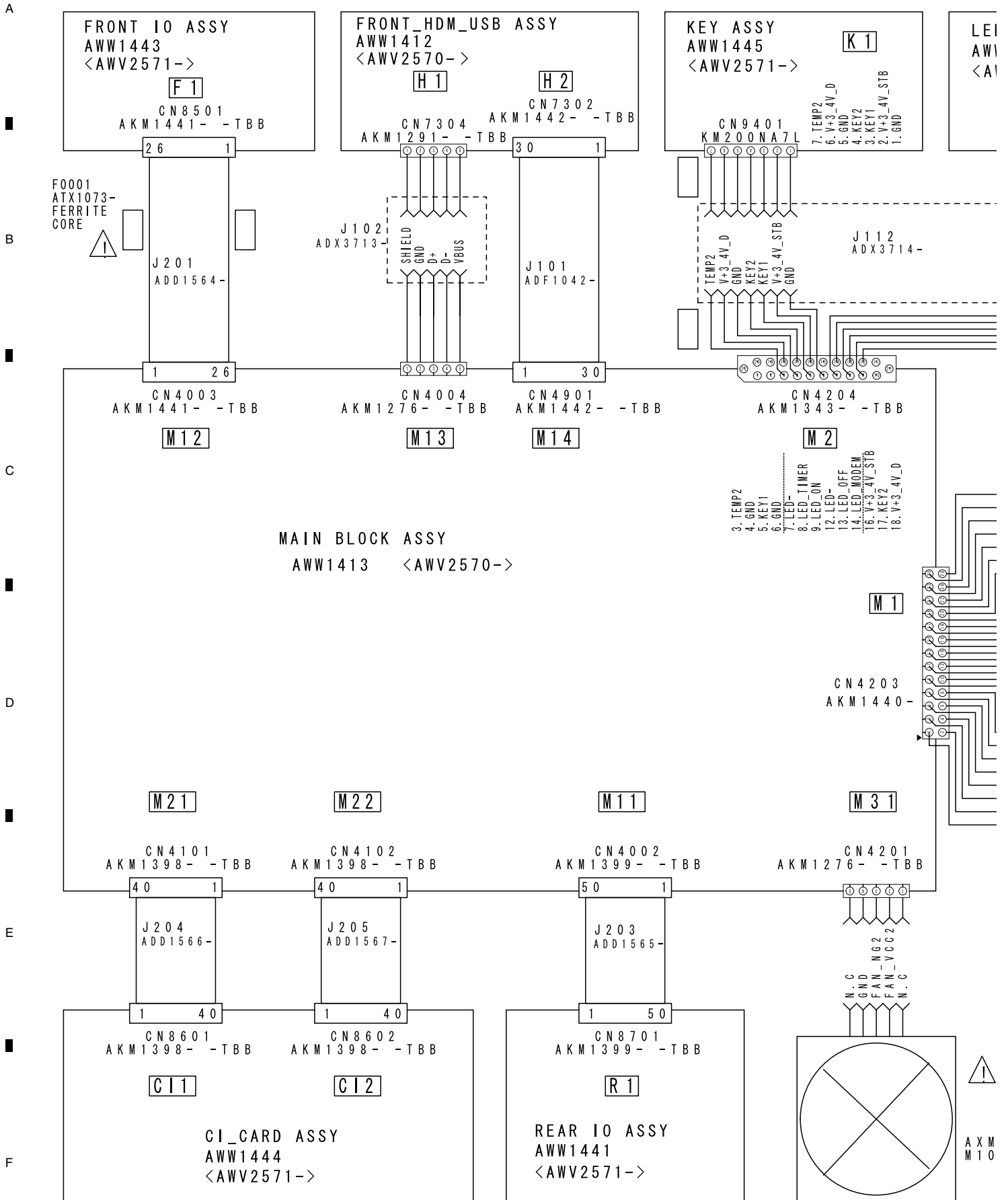


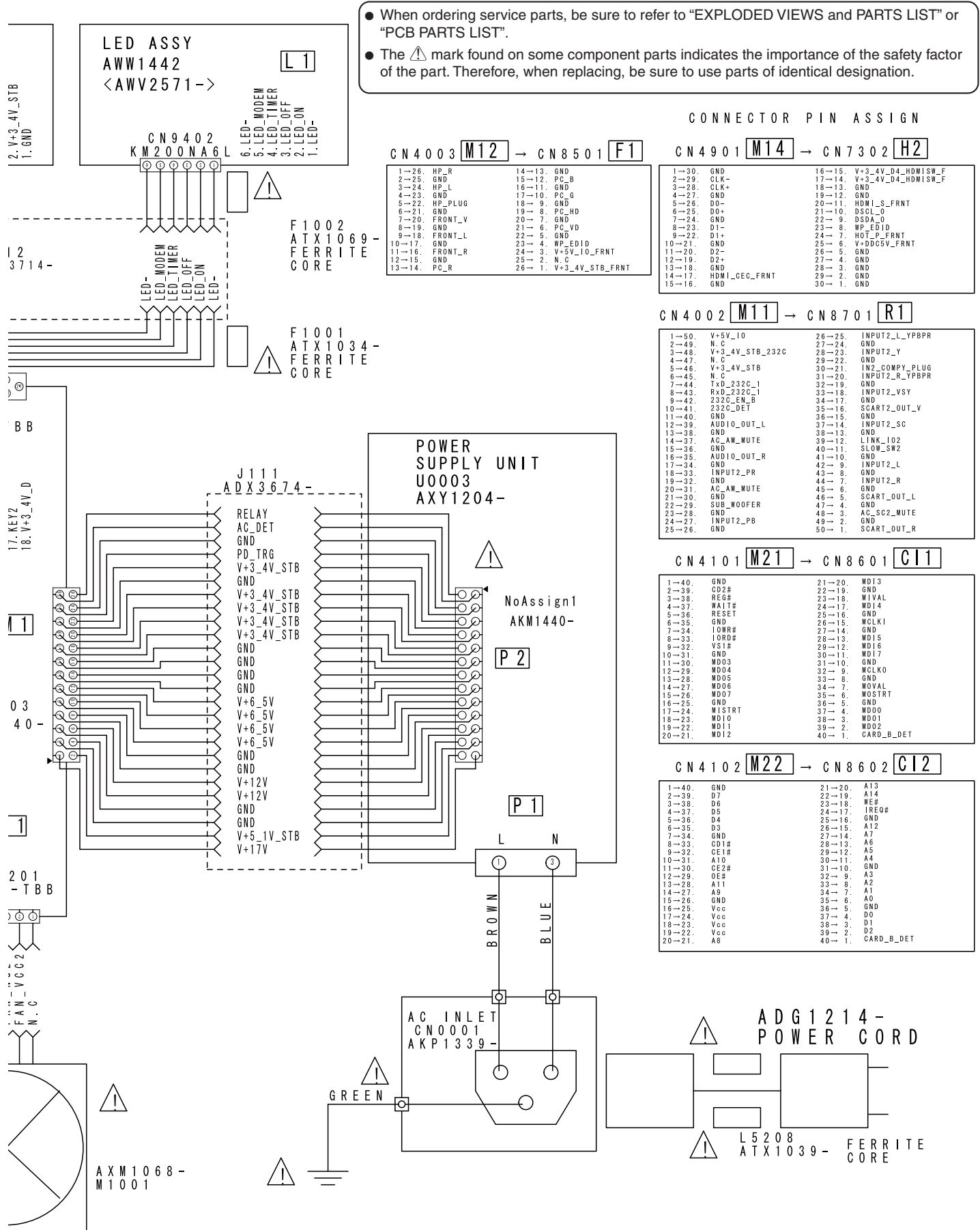
NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Mark No.	Description	Part No.	Mark No.	Description	Part No.
LIST OF ASSEMBLIES					
NSP	1..MAIN ASSY	AWV2570	NSP	1..FUKUGO ASSY	AWV2571
	2..FRONT_HDM_USB ASSY	AWW1412		2..REAR IO ASSY	AWW1441
	2..MAIN BLOCK ASSY	AWW1413		2..LED ASSY	AWW1442
				2..FRONT IO ASSY	AWW1443
				2..CI CARD ASSY	AWW1444
				2..KEY ASSY	AWW1445
			⚠	1..POWER SUPPLY UNIT	AXY1204

4. BLOCK DIAGRAM

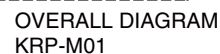
4.1 OVERALL WIRING DIAGRAM





4





A

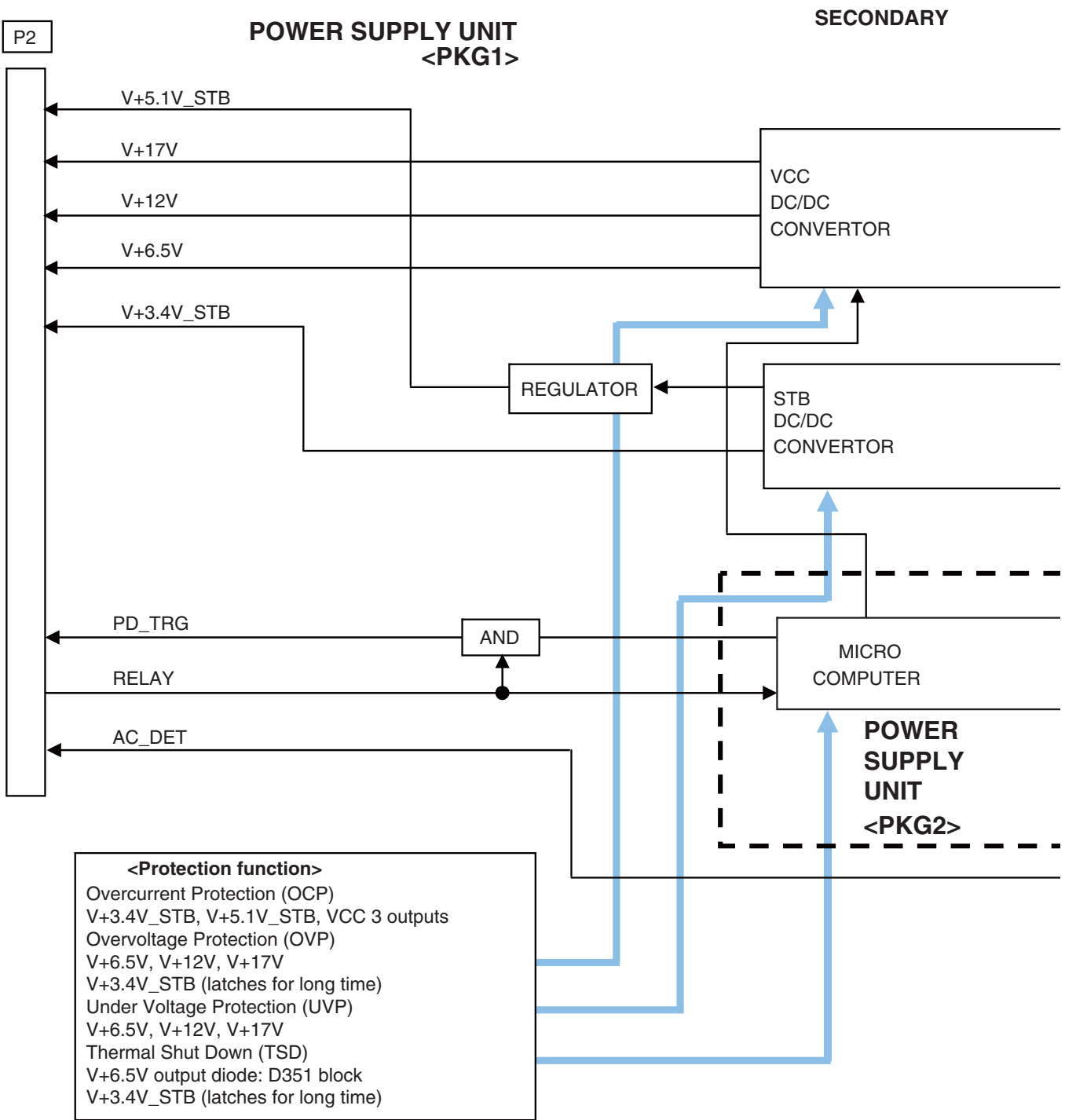
B

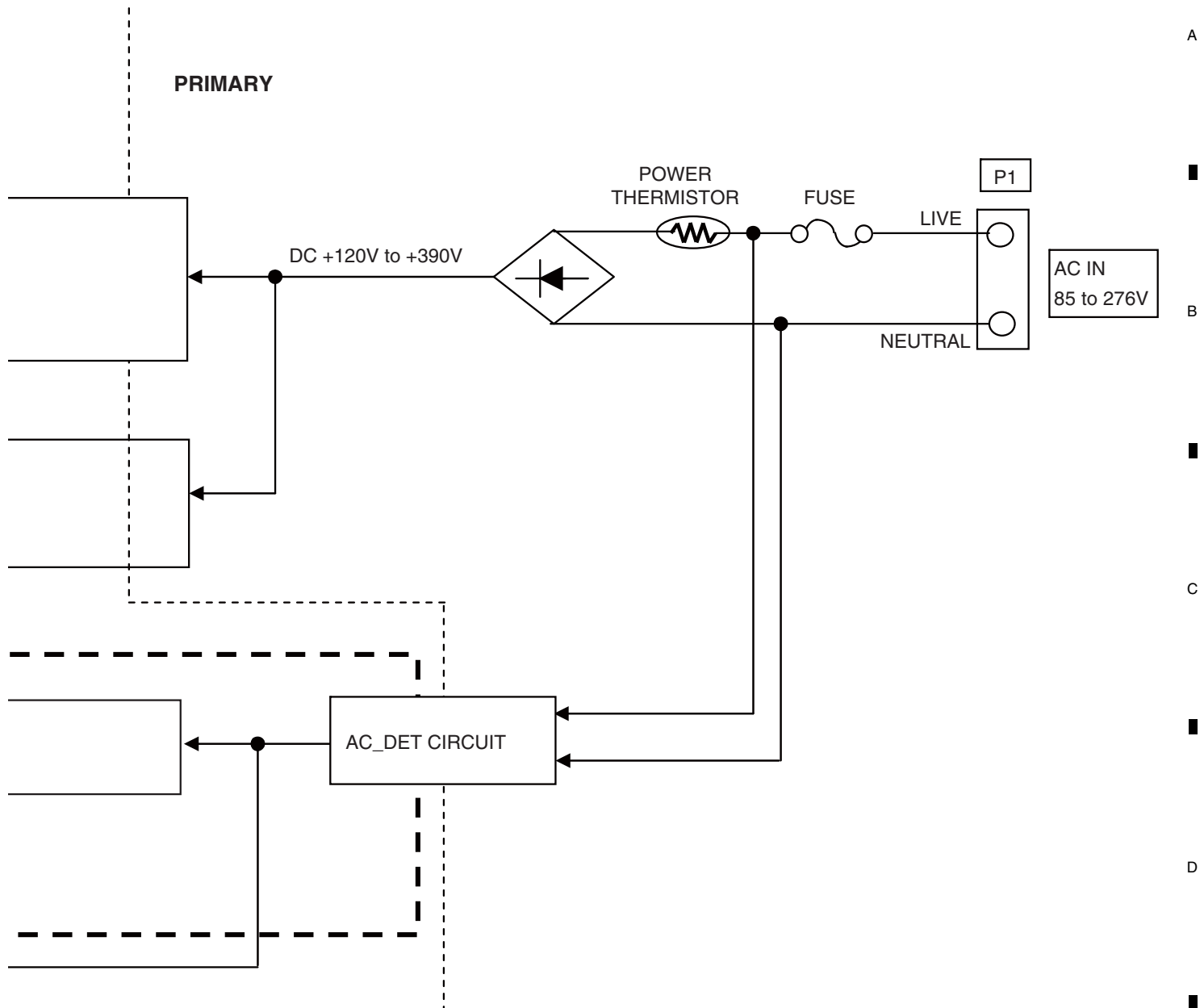
C

D

E

F





Logic Signal Specifications

[Logic level] H: STB3.4 V × (0.8 to 1.1), L: ≤ STB3.4 V × 0.2

Signal Name	I/O	Function	Logic		Description
RELAY	IN	Relay ON/OFF	H	ON	For controlling ON/OFF of all output signals other than STB signals
			L	OFF	
			Open	OFF	
PD_TRG	OUT	Determination of abnormality inside the POWER SUPPLY Unit	H	Determination of abnormality	For sending a deterministic signal when an abnormality is generated inside the POWER SUPPLY Unit to shut off any output signals other than STB signals
			L	Normal	
AC_DET	OUT	AC detection	H	Present	For detecting the presence of the AC input voltage, regardless of ON/OFF of STB 3.4 V output
			L	Absent	

4.4 POWER SUPPLY BLOCK of MAIN BLOCK ASSY

A

B

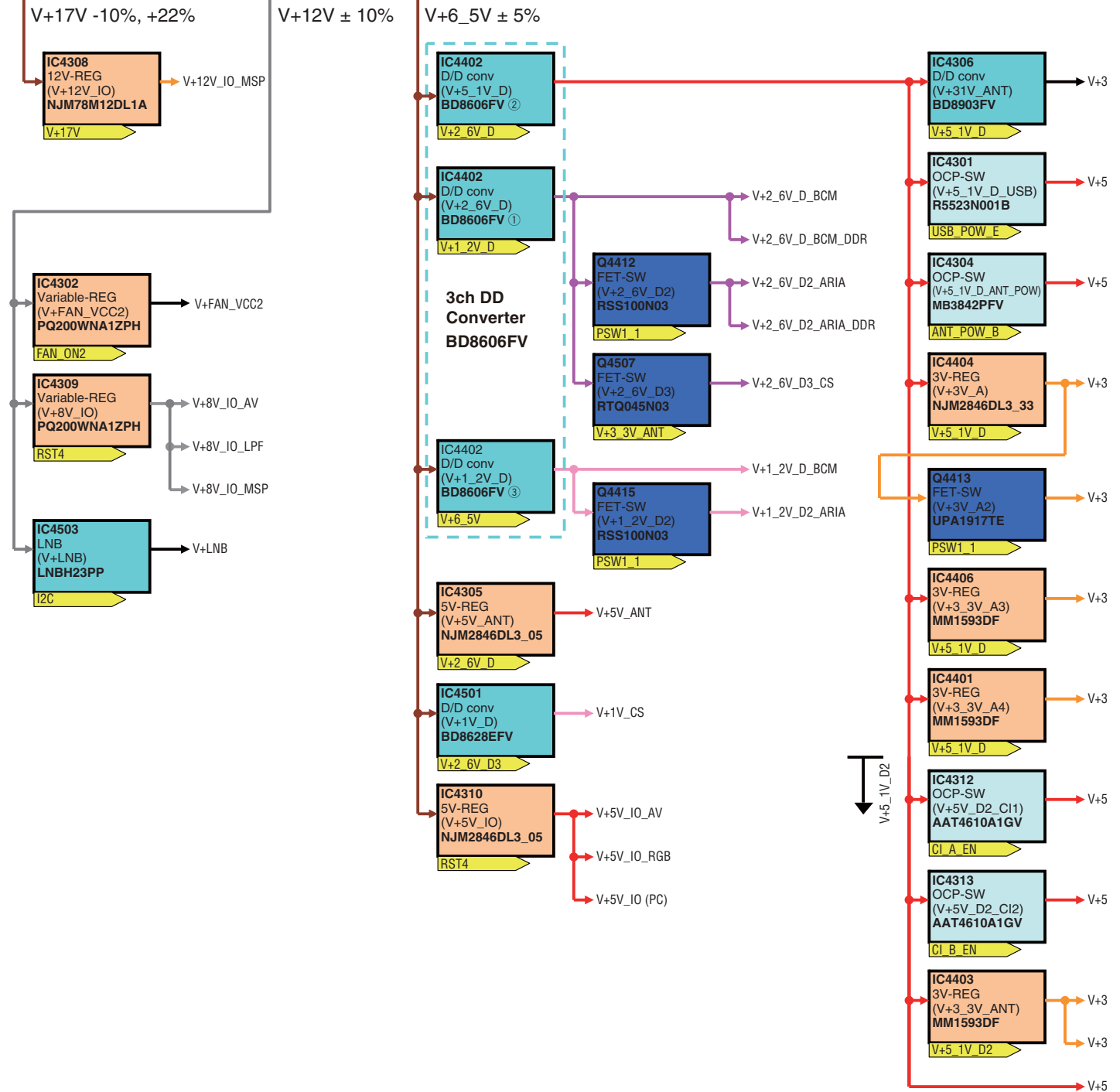
C

D

E

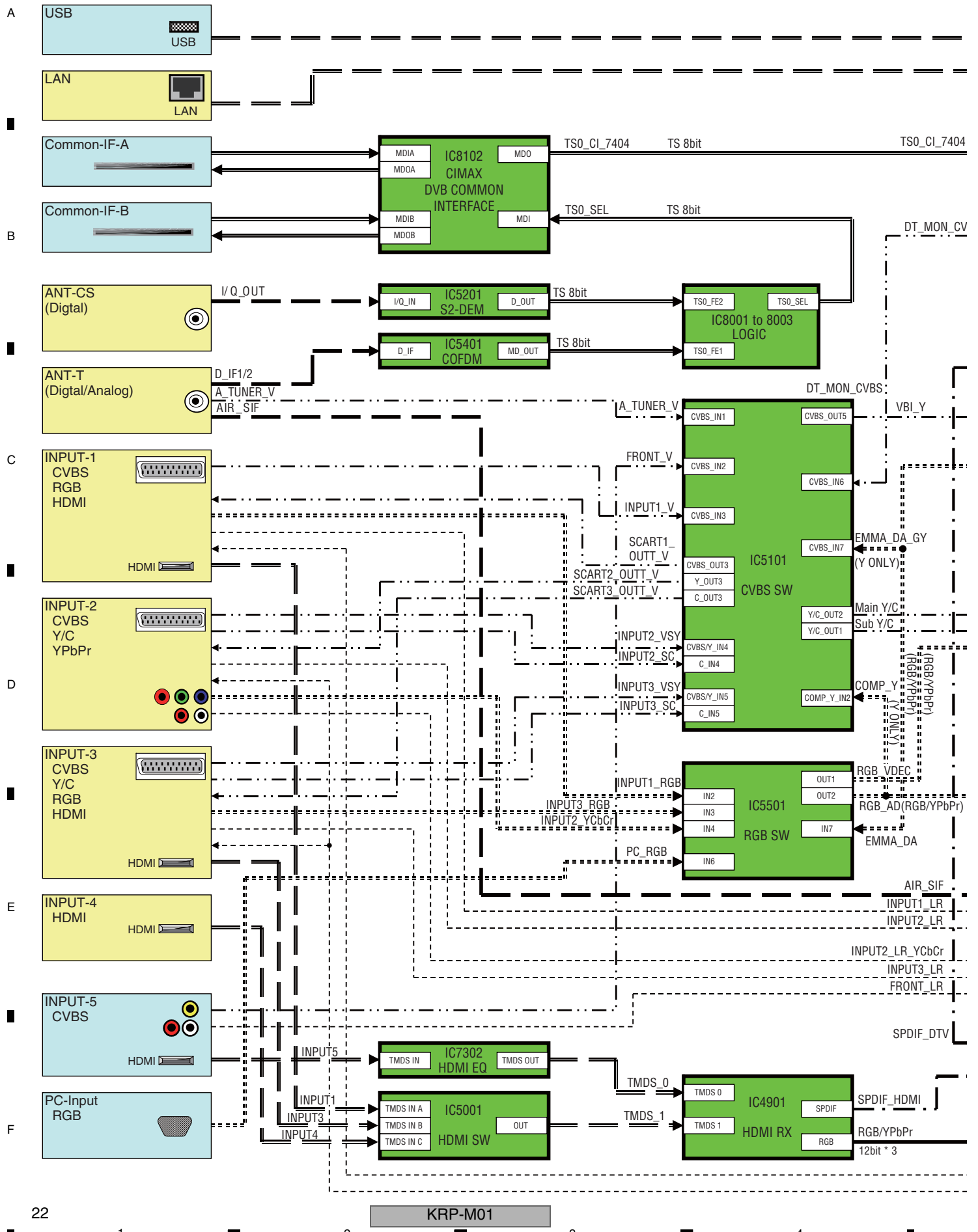
F

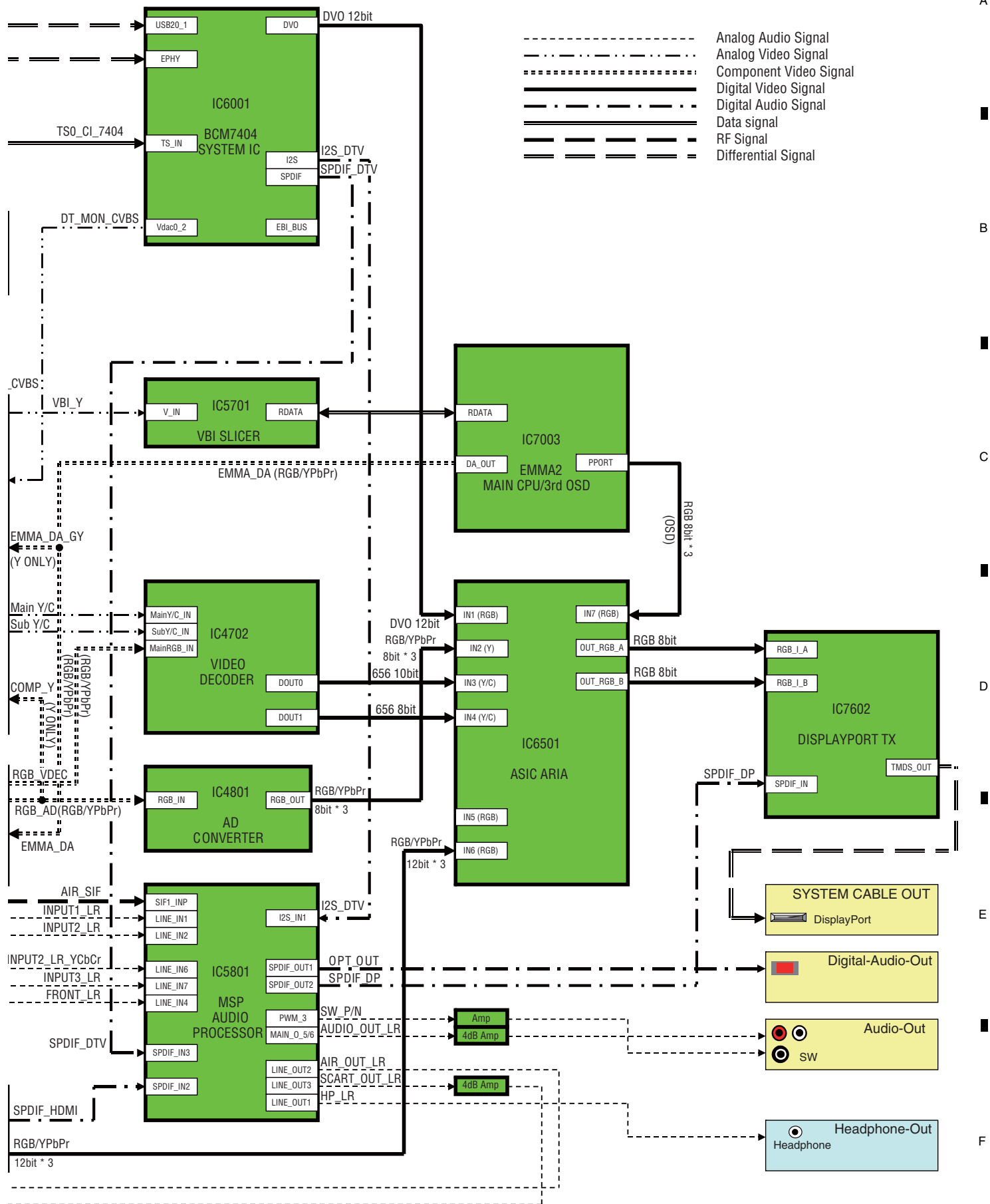
SW REG CONTROLLED BY RELAY





4.5 AV BLOCK





5. DIAGNOSIS

5.1 POWER SUPPLY OPERATION

[1] LED DISPLAY INFORMATION

LED Pattern

Status	LED	LED Pattern / Remarks			
Standby Power Management	Blue Red Orange				
Power On	Blue Red Orange				
Power-Down	Blue Red Orange	Once 500ms	Twice	n times 2.5s	Once *1
Shutdown	Blue Red Orange	500ms Once	Twice	n times 2.5s	Once *2
Shutdown (Subcategory flashing)	Blue Red Orange	500ms Once 500ms	Twice	n times 2.5s	Once *2 *3
No digital adjustment data copied for backup	Blue Red Orange	200ms			
Updating the PC	Blue Red Orange	100ms			
During factory operation	Blue Red Orange				
During DTB communication inhibit	Blue Red Orange	100ms			
During USB update	Blue Red Orange	100ms			
Updating of USB is finished normally.	Blue Red Orange	100ms			
Updating of USB is abnormally finished.	Blue Red Orange	100ms 100ms 500ms	Once Twice	500ms n times 2.5s	500ms *4
Power ON of standalone mode (Screen ON)	Blue Red Orange	1000msec	1000msec	1000msec	1000msec
Mode switch of system / standalone operation	Blue Red Orange	200ms			
Sleep timer	Blue Red Orange				
During reservation video recording (Unit: Standby)	Blue Red Orange				
During reservation video recording (Unit: ON)	Blue Red Orange				



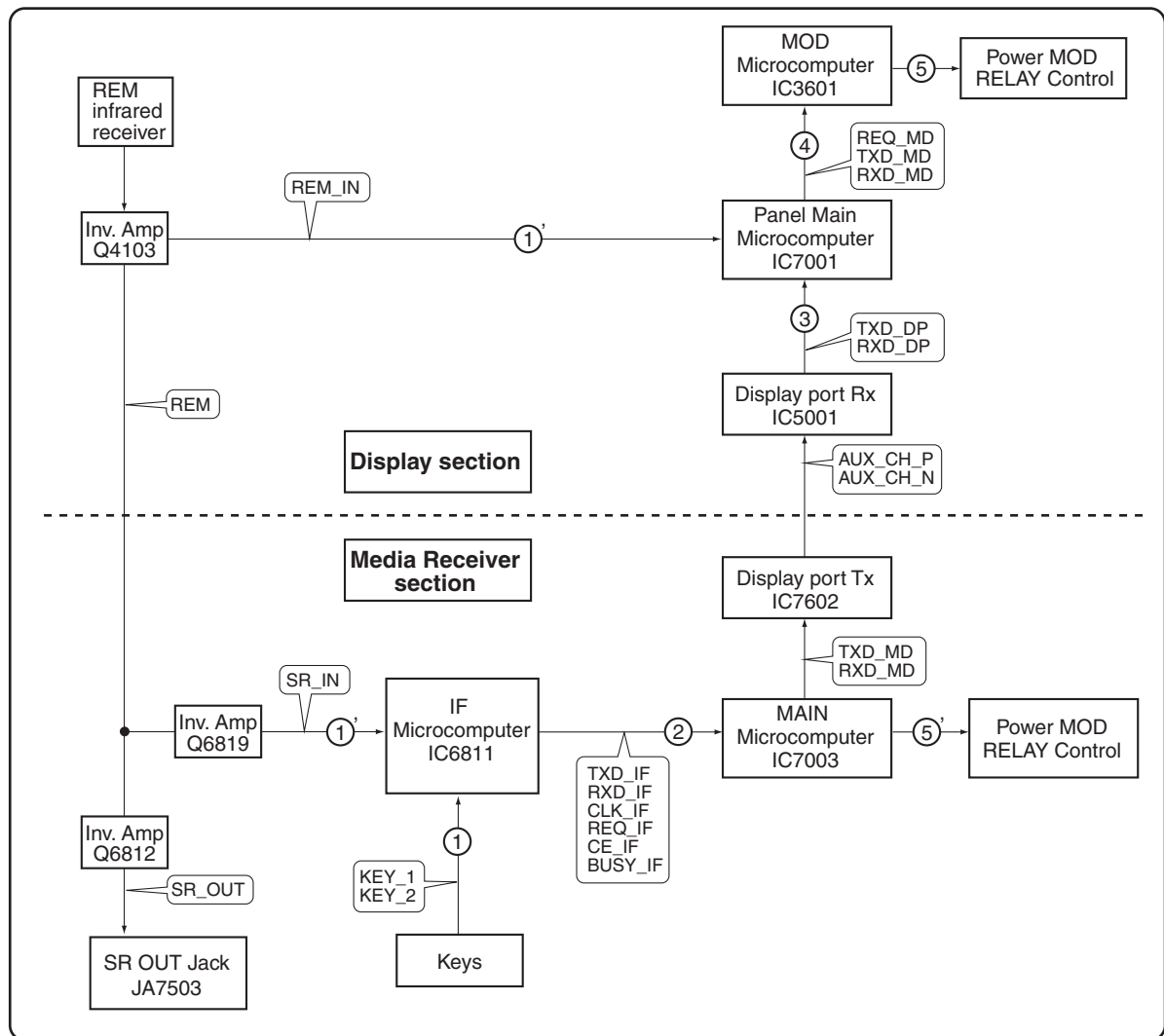
*1: Notify upon the power-down content by Red LED flashing number of times.

*2: Notify upon the shutdown content by Blue LED flashing number of times

*3: Notify upon the subcategory number by Orange LED flashing number of times.

*4: Notify upon the abnormal state by Orange LED flashing number of times.

[2] POWER ON SEQUENCE



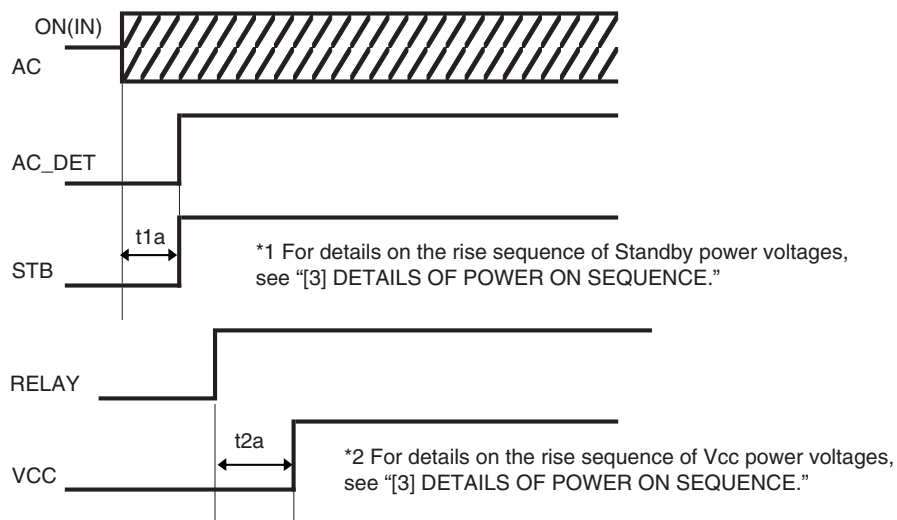
- ① : The KEY signal is input to the IF microcomputer.
- ①' : The remote control signal is input to the IF microcomputer and Panel main microcomputer.
- ② : The IF microcomputer sends the operation data of the remote control unit key to the main microcomputer.
- ③ : The main microcomputer issues a startup command (PON) to the panel main microcomputer through DP Tx and DP Rx.
- ④ : The panel main microcomputer issues a startup command (PON) to the MOD microcomputer.
- ⑤ : The MOD microcomputer controls a MOD relay of the POWER SUPPLY Unit (Display section), then the power is turned on.
- ⑤' : The main microcomputer controls a MOD relay of the POWER SUPPLY Unit (Media Receiver section), then the power is turned on.

A

OUTLINE OF POWER ON SEQUENCE

The rise of the output voltage is defined as the point at which 10% output voltage is reached, and the fall is defined as the output supply stop point.

Sequence of AC ON (IN)



(a) Relay signal: When the POWER key on the remote control unit is pressed after that on the unit is set to ON

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
RELAY to VCC	$t2a \leq 0.5s$

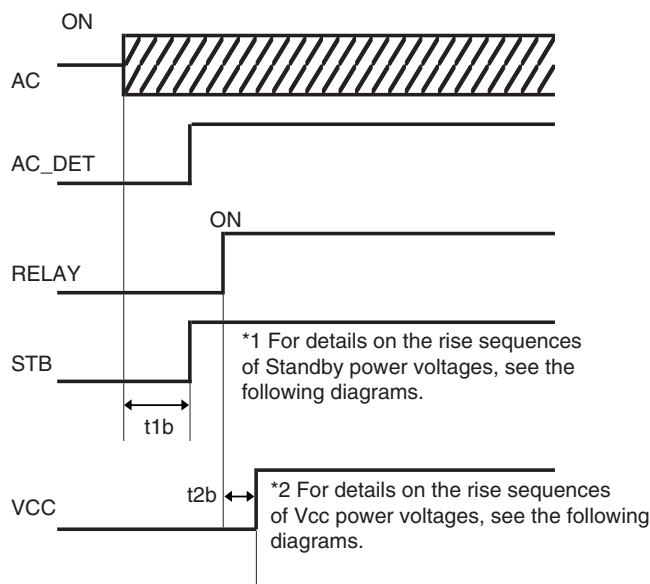
(b) Relay signal: When the POWER key on the remote control unit is pressed while the unit is OFF (in Standby mode)

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
Relay to VCC	t2a No specification

[3] DETAILS OF POWER ON SEQUENCE

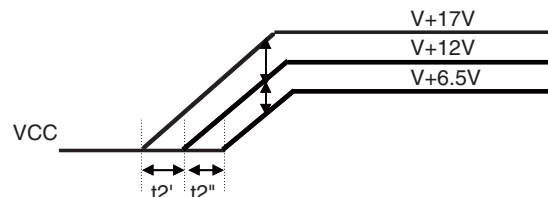
The rise of the output voltage is defined as the point at which 10% output voltage is reached.

1. Sequence of Relay ON (IN)



Relay ON	
Item	Specified Time
AC to STB	$t1b \leq 0.8s$
RELAY to VCC	$t2b \leq 0.5s$

3. Rise sequences of Vcc power voltages



<Specified time of voltages>

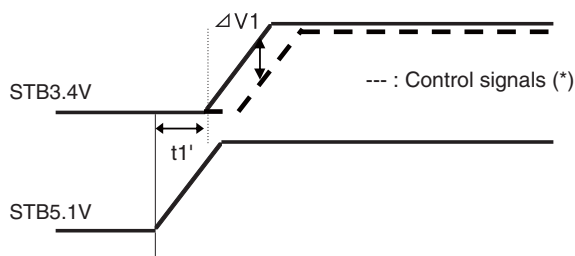
Rise	
Item	Specified time (at nominal load)
V+17V to V+12V	$0ms \leq t2' \leq 10ms$
V+12V to V+6.5V	$0ms \leq t2'' \leq 10ms$

4. Specifications of the rise time of the output voltages (common to all sequences)

Note that there must not be any temporary voltage drop during rising.

Rise time (time required for reaching from 10% to 90% output voltage)	
Item	Specified time
STB 10% to STB 90%	$tr_STB \leq 100ms$
VCC 10% to VCC 90%	$tr_VCC \leq 200ms$

2. Rise sequence of Standby power voltages



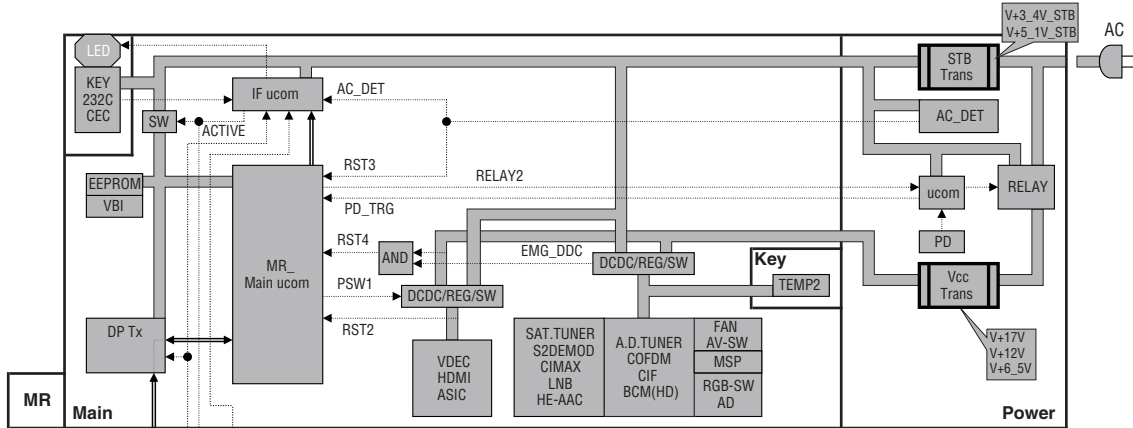
<Specified time and difference of voltages>

Rise	
Item	Specified Time
STB5.1V to STB3.4V	$-50ms \leq t1' \leq 50ms$
Item	Specified difference of voltages
STB3.4V - Control signal (*)	$0V \leq \Delta V1$

(*) Control signals (output signals) denote AC_DET and PD_TRG signals.

A DETAILS OF POWER ON SEQUENCE

AC-OFF



(MR) Output port setting

IF: ACTIVE	OFF
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

All devices are not electrified.

(Panel) Output port setting

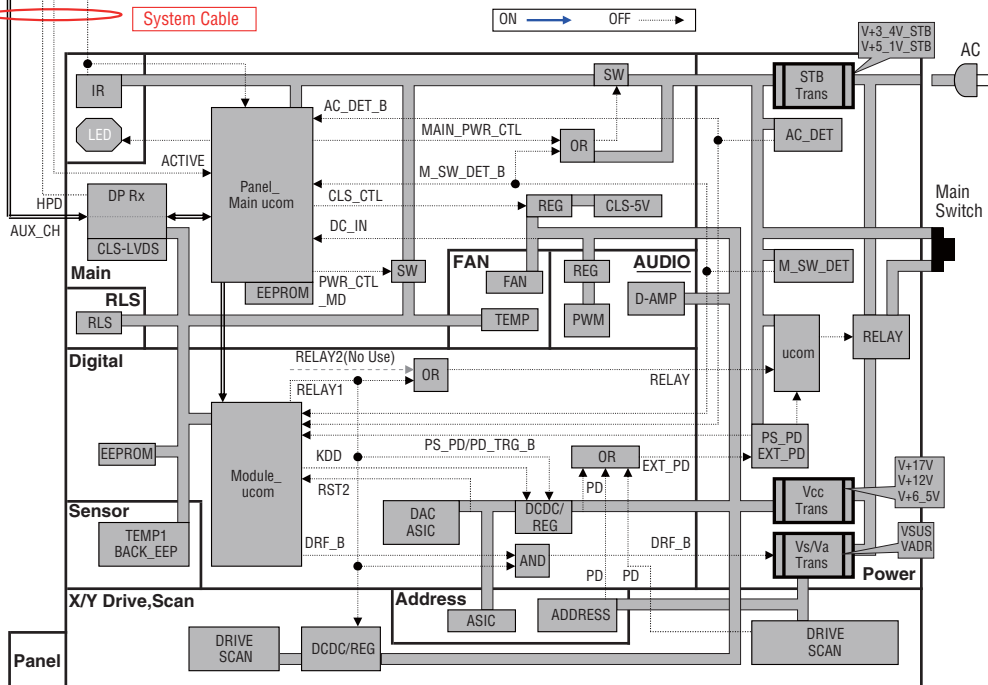
Panel Main: MAIN_PWR_CTL	OFF
Panel Main: PWR_CTL_MD	OFF
Panel Main: CLS_CTL	OFF
DP Rx: HPD	OFF
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

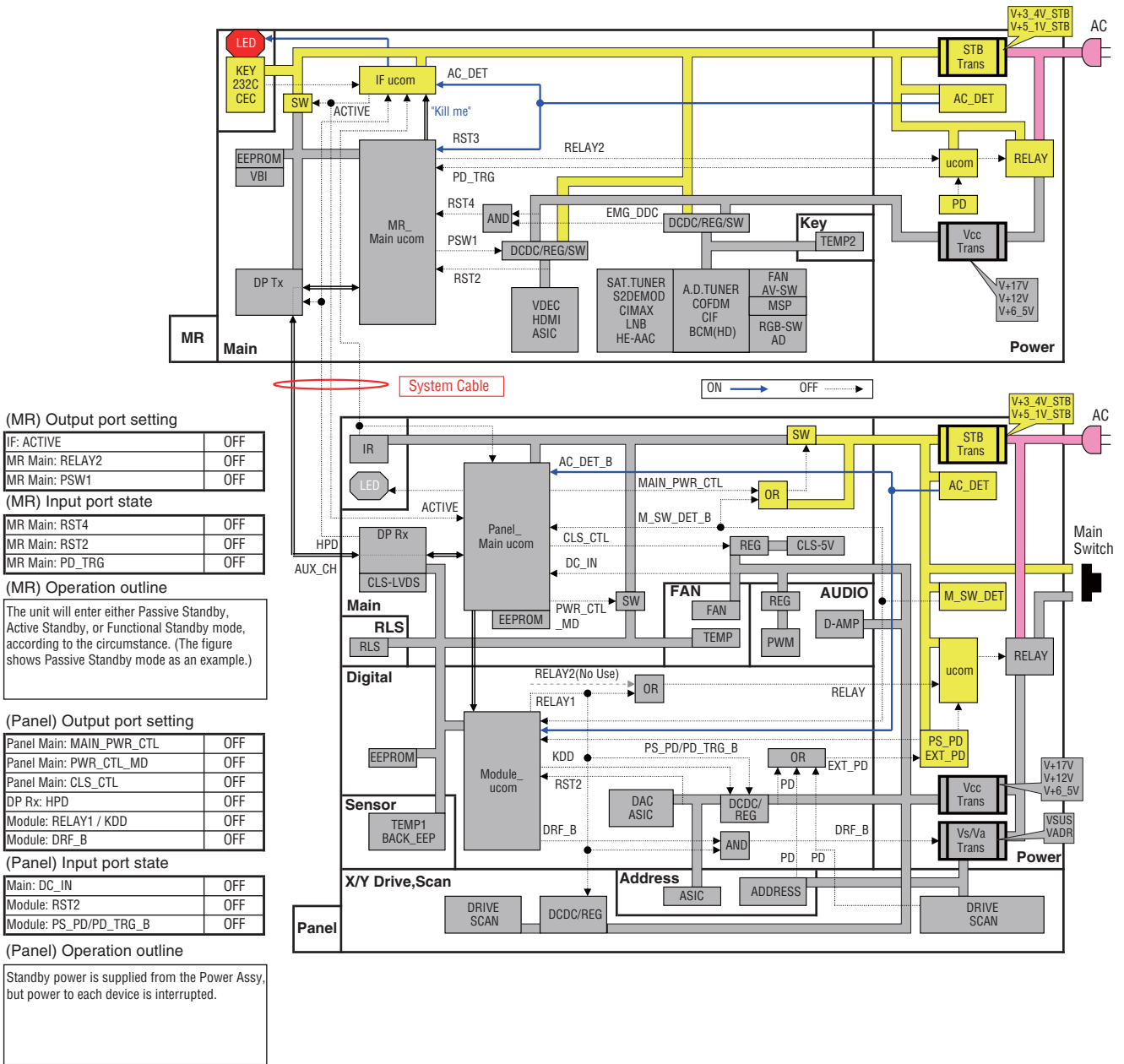
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

(Panel) Operation outline

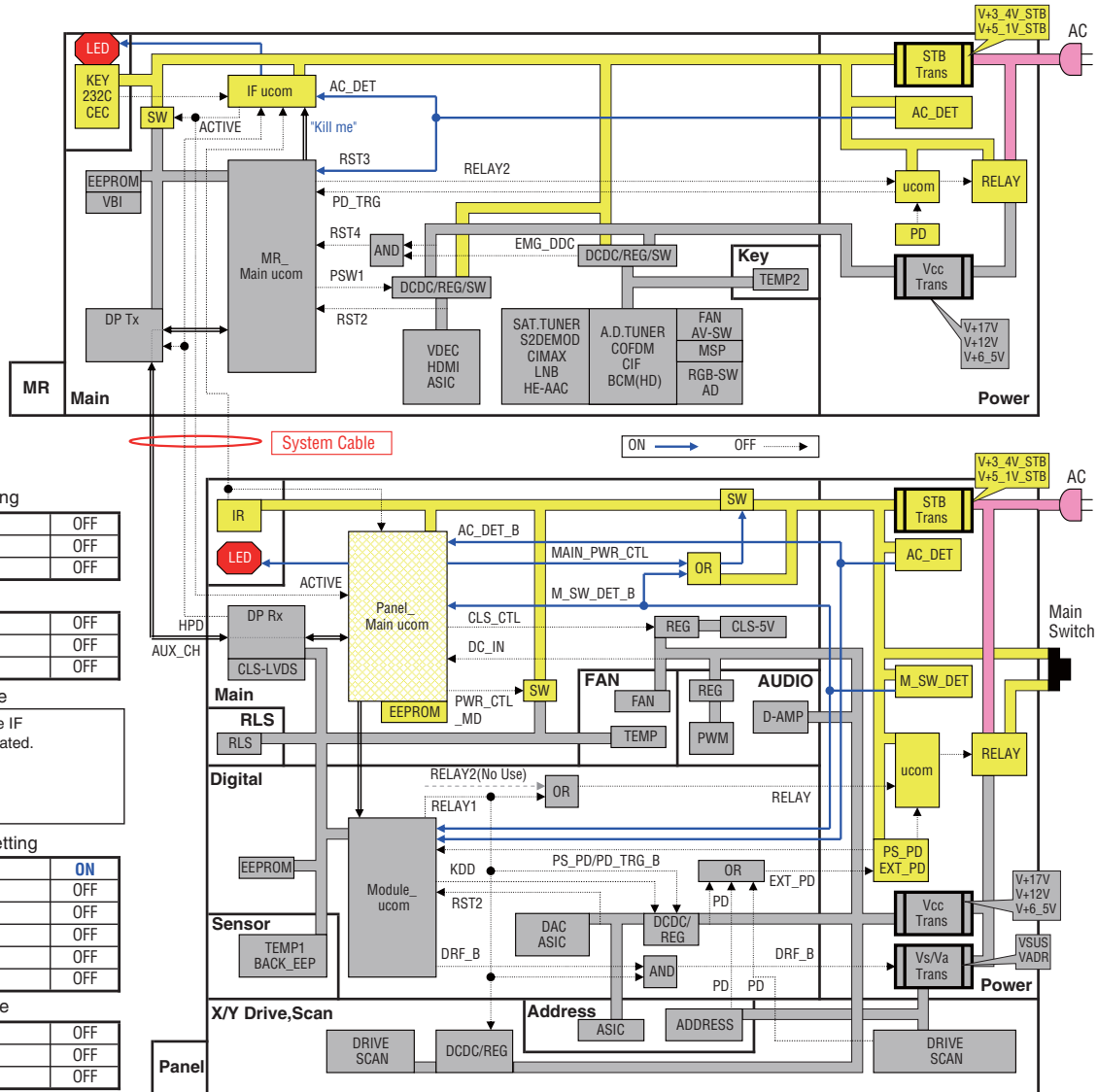
All devices are not electrified.



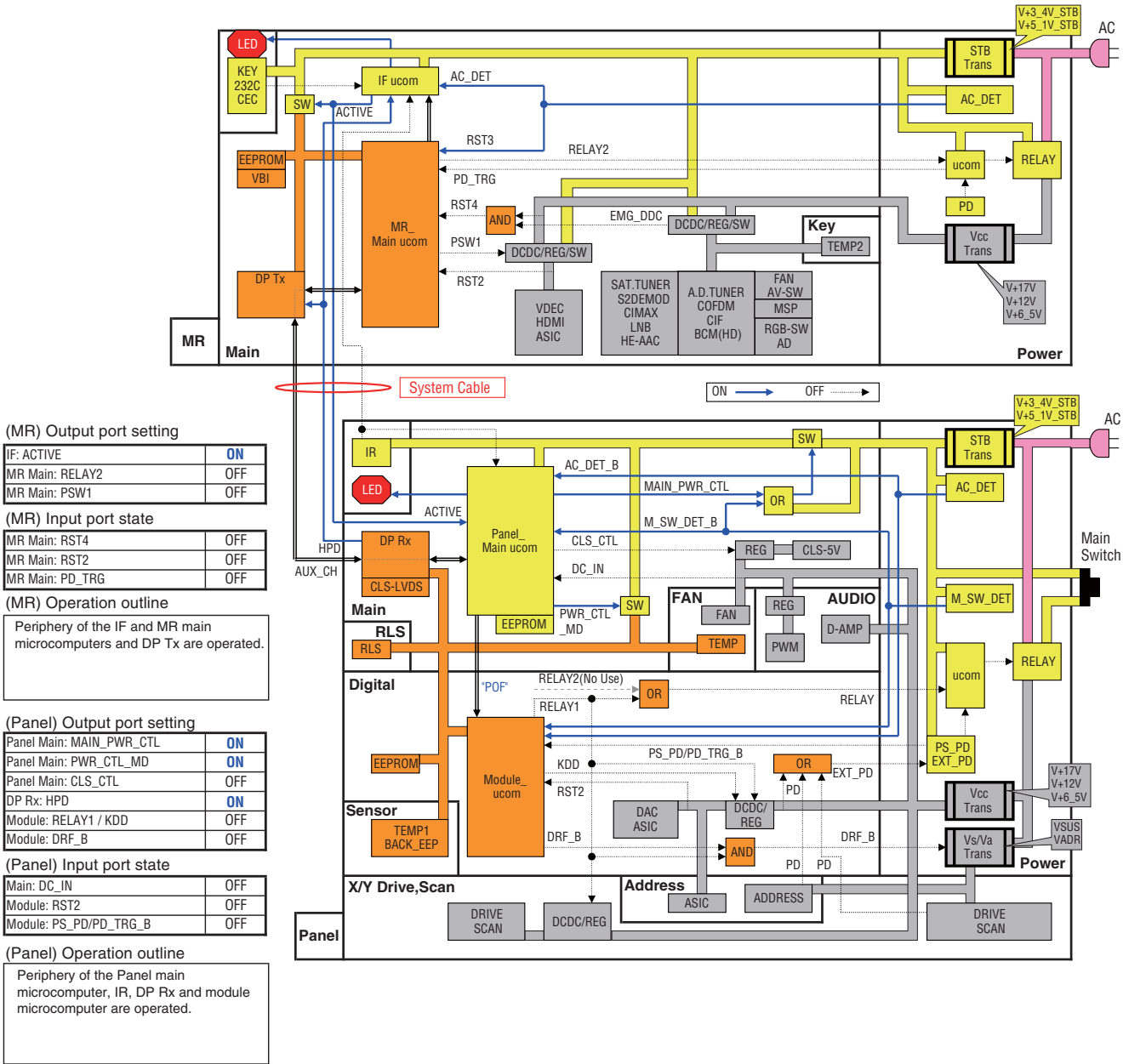
Panel Main Power OFF



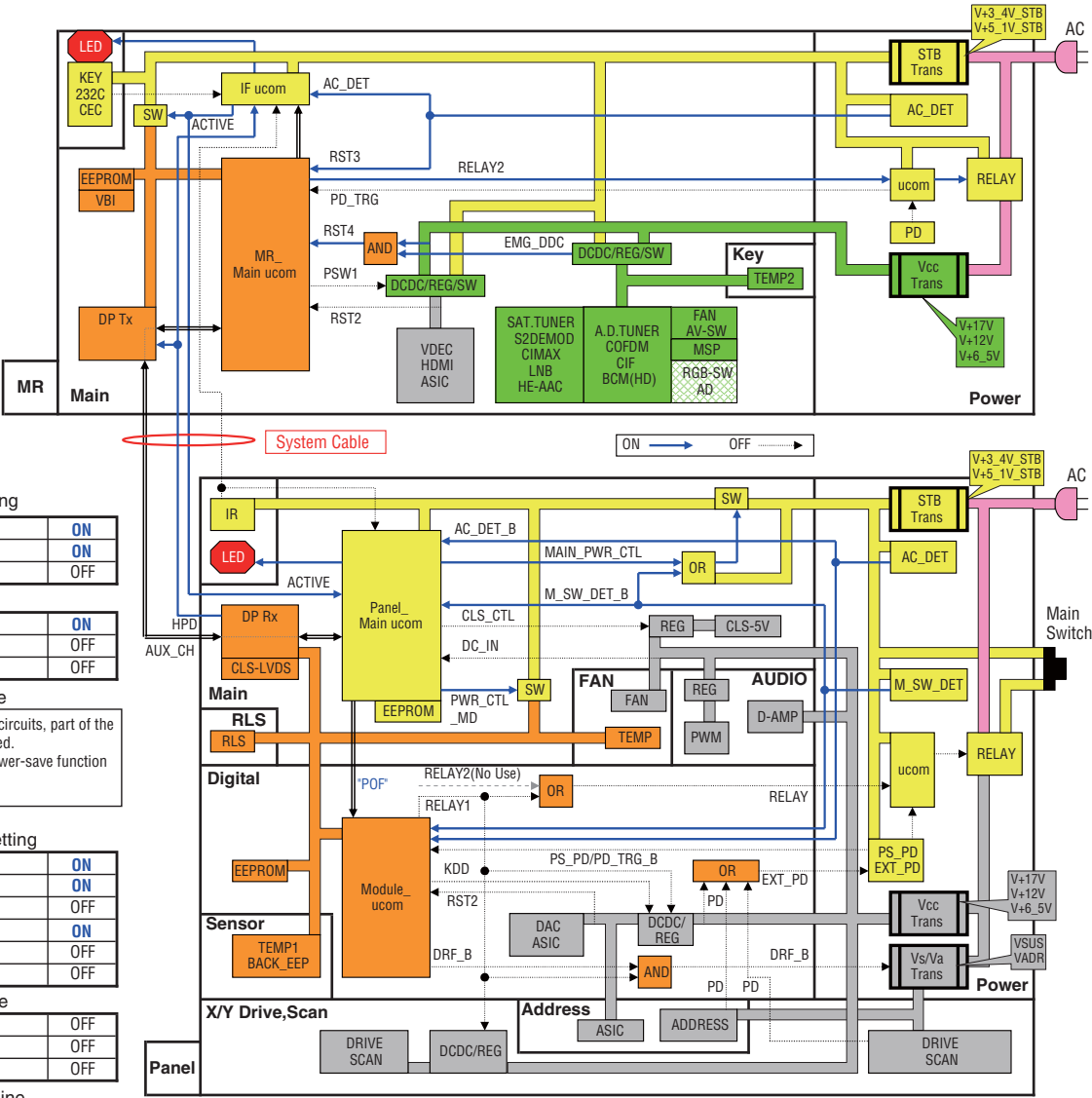
Passive Standby



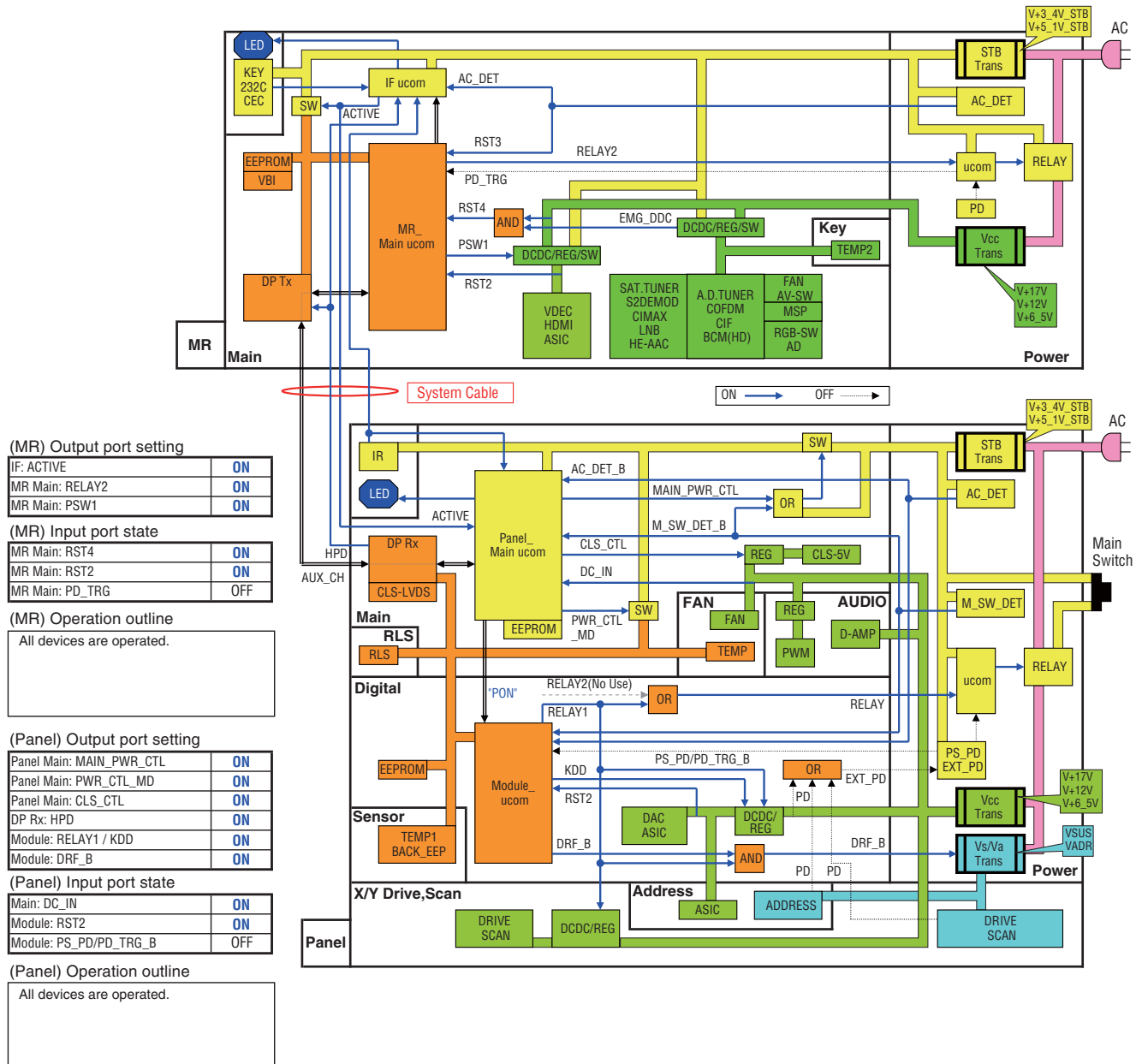
Active Standby



Function Standby



PDP Screen ON

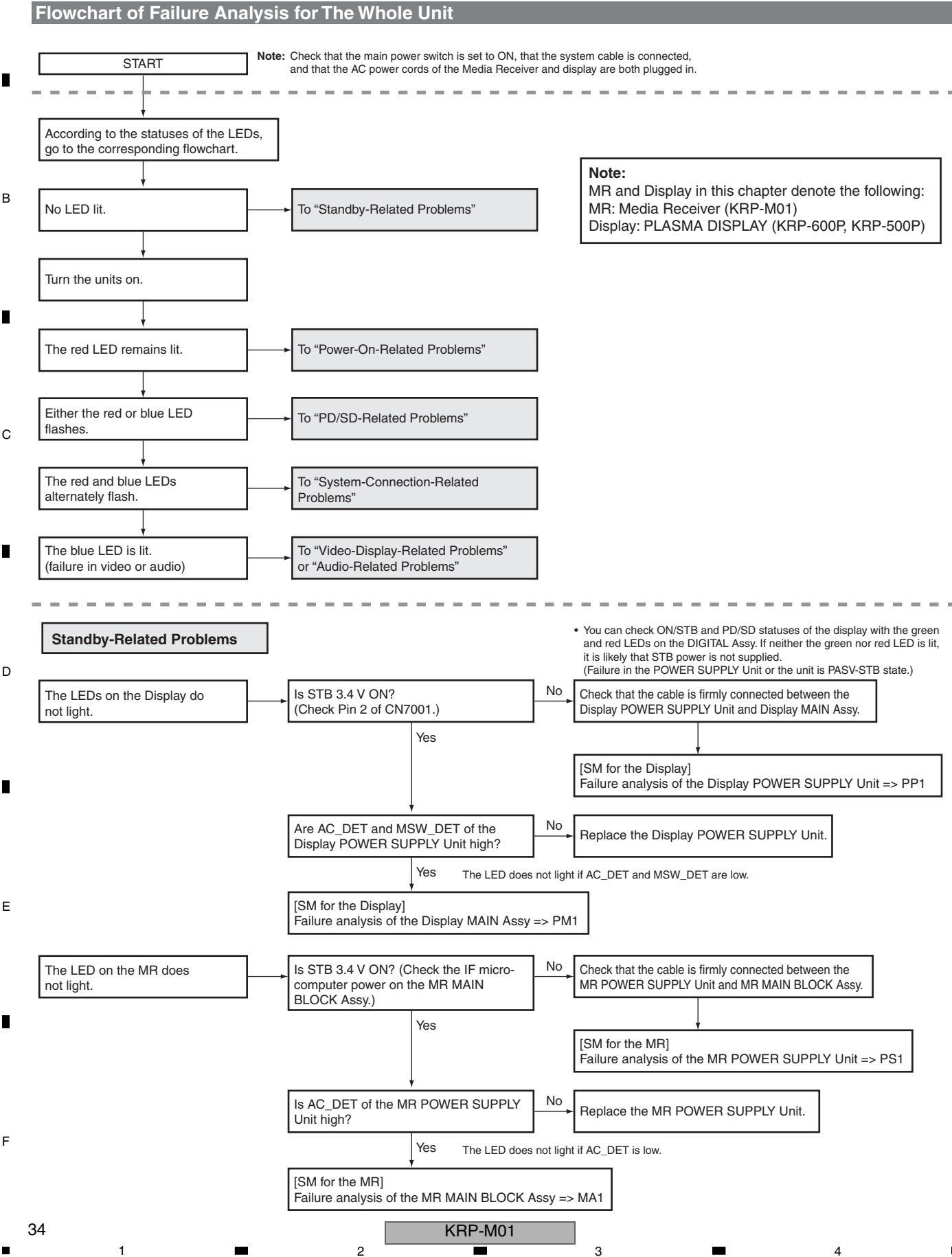


1234

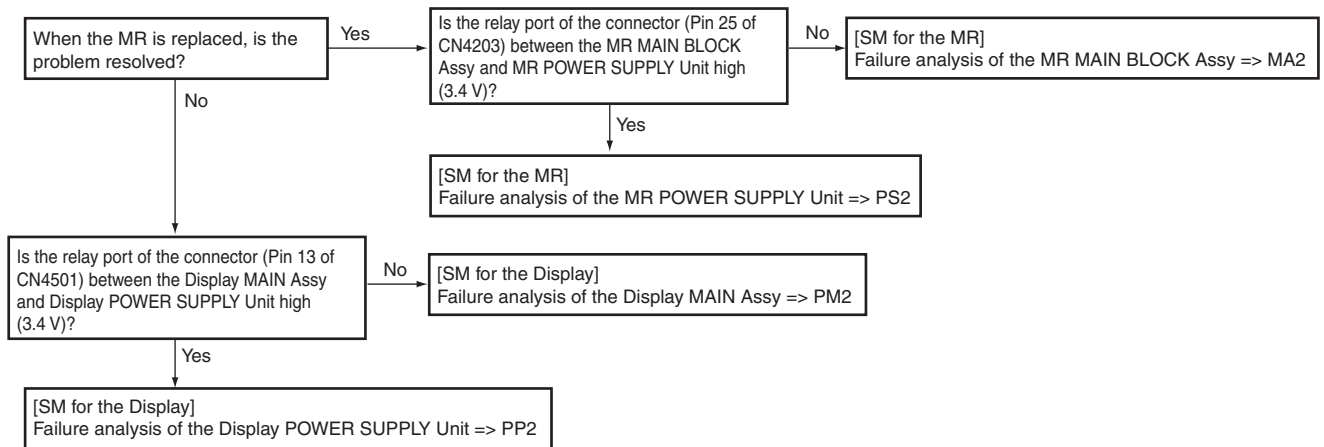
5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

A

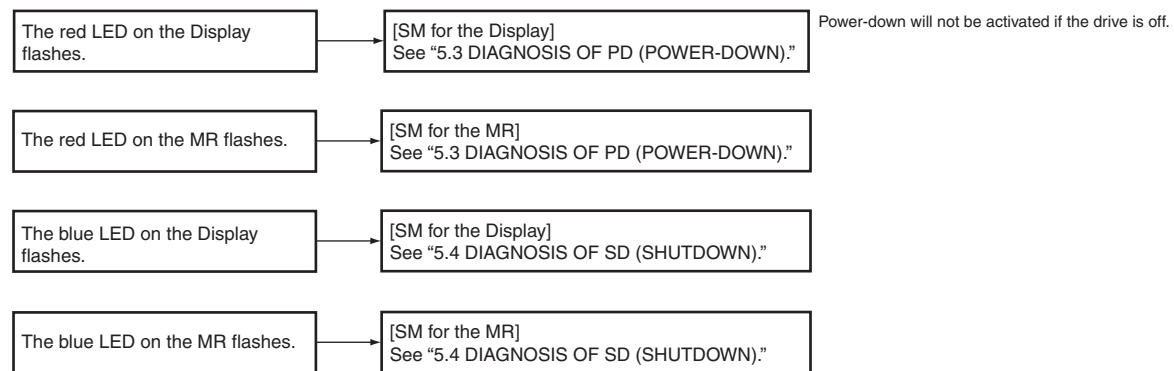
[1] WHOLE UNIT



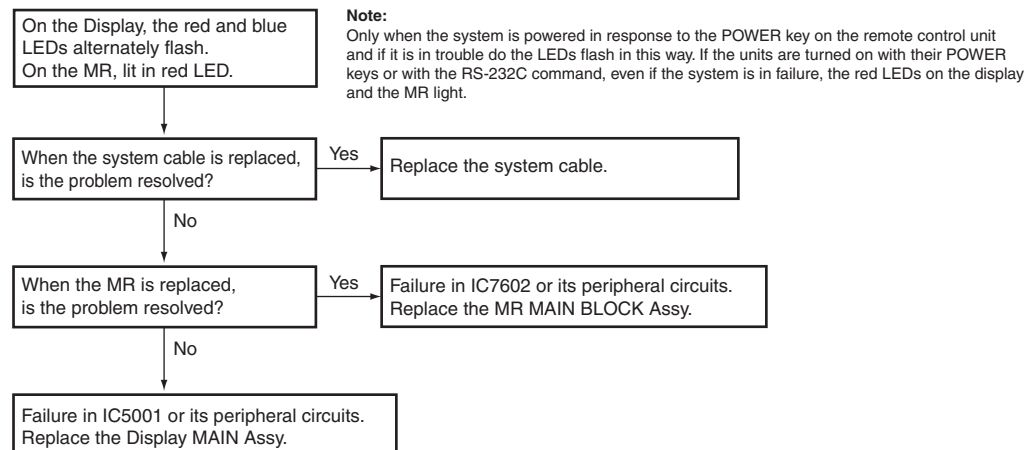
Power-On-Related Problems



PD/SD-Related Problems

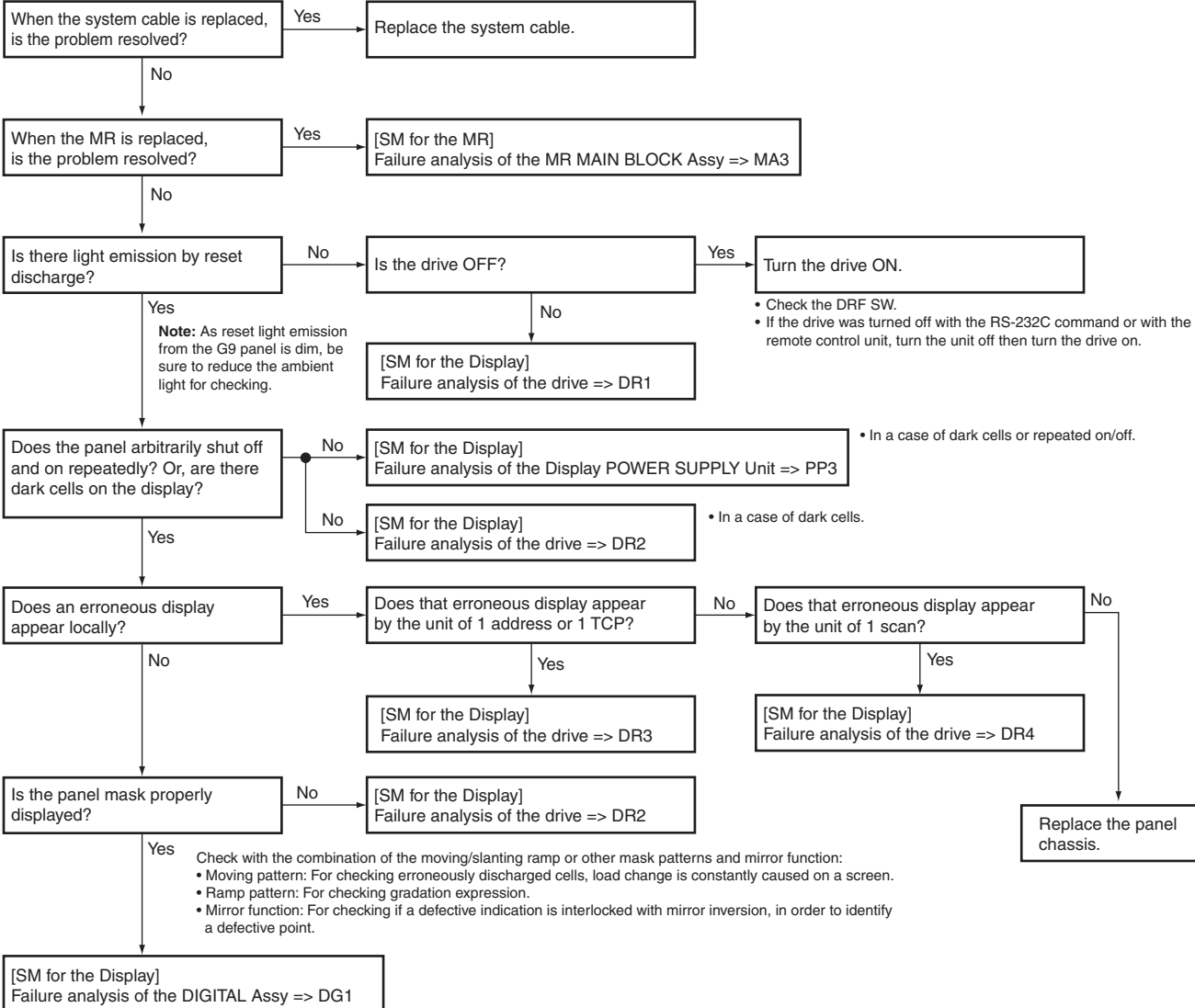


System-Connection-Related Problems



A

Video-Display-Related Problems



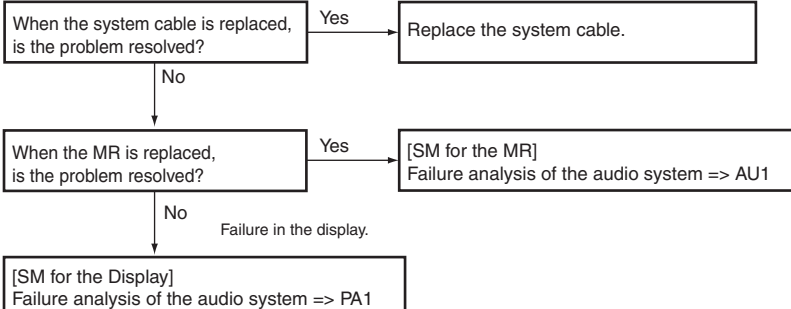
B

C

D

E

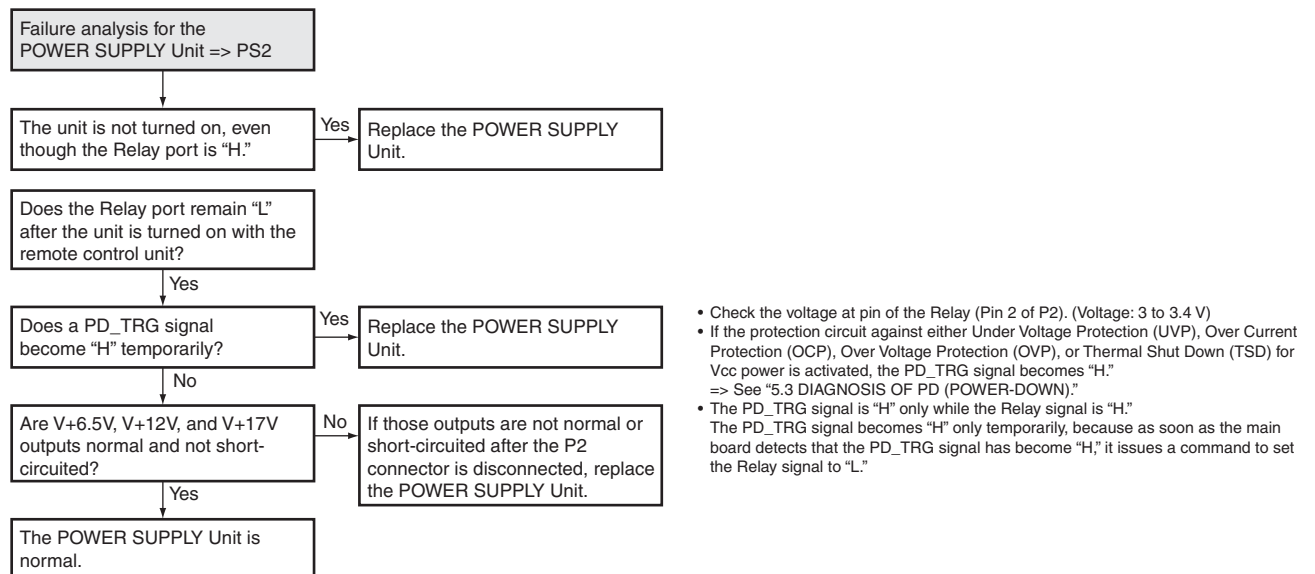
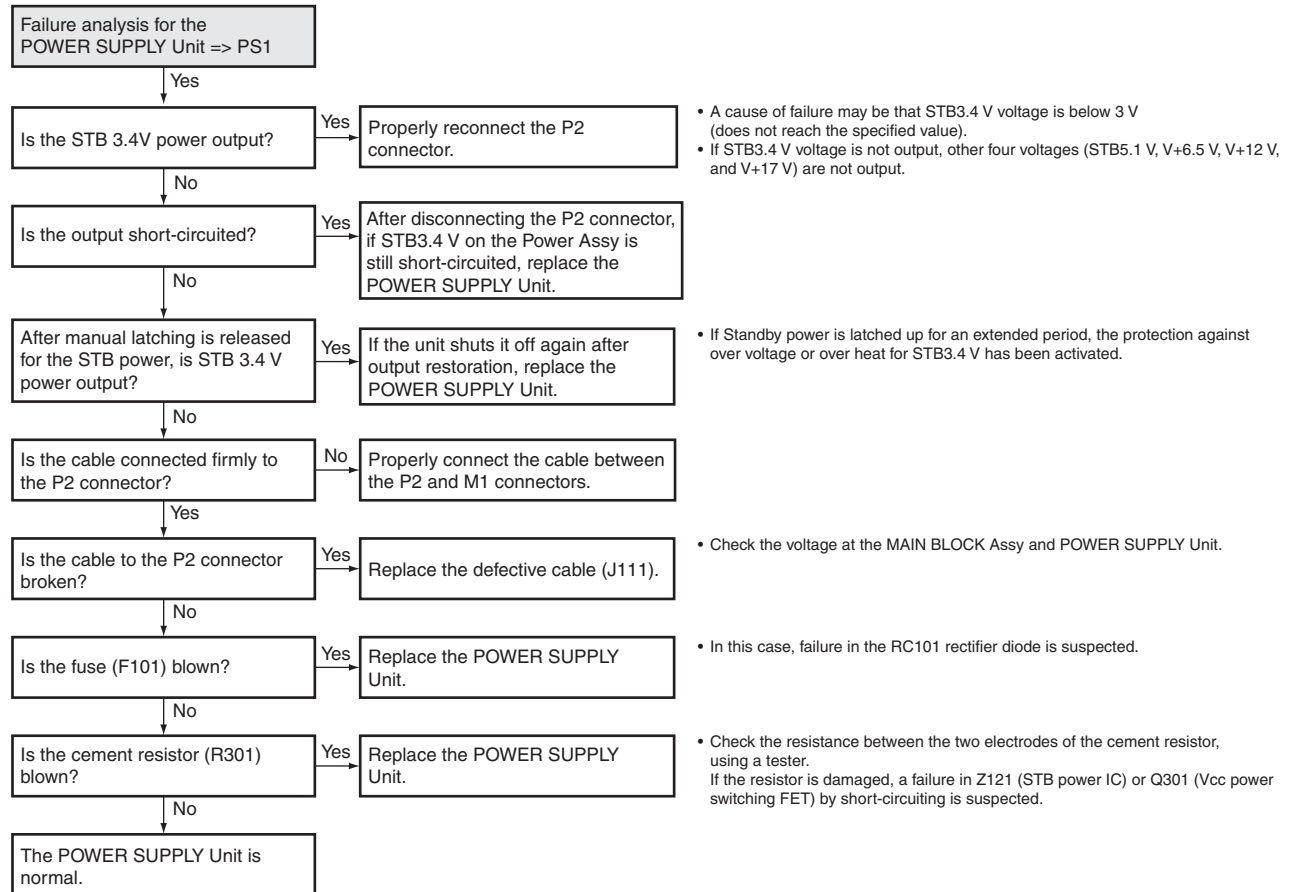
Audio-Related Problems



F

[2] POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit



[3] MAIN BLOCK ASSY

Flowchart of Failure Analysis for The MAIN BLOCK Assy

Failure analysis for the
MAIN BLOCK Assy => MA1

The STB LED does not light although
STB 3.4 V power is supplied.

Is resetting of the IF
microcomputer (pin 10) canceled?

No

Replace the MAIN BLOCK Assy.

Failure in the RST IC (IC6801) output or its peripheral circuits.

Yes

Is the voltage at Pin 13 of the M2
connector High?

No

Replace the MAIN BLOCK Assy.

Failure in the line between the IF microcomputer and M2 connector.

Yes

Is the M2 connector securely
connected?

No

Securely connect the M2 connector.

Yes

Is the cable that is connected to
the M2 connector broken?

Yes

Replace the cable (J112).

No

No problem with the MAIN BLOCK
Assy. Check the LED Assy.

Failure analysis for the
MAIN Assy => MA2

The RELAY port does not work.
The power is not turned on.

Are the voltages (1.5 V/2.5 V/3.4 V)
supplied to the main microcomputer?

No

Replace the MAIN BLOCK Assy.

Yes

Is voltage at REQ_IF (TP6830) on
the MAIN BLOCK Assy High
(3.4 V)?

No

Can the unit be turned on, using
the remote control unit?

No

Replace the system cable that
connects between the Display and
MAIN BLOCK Assy (MR).

NG

Replace the MAIN BLOCK Assy.

Yes

Can the unit be turned on, using
the Power switch on the unit?

No

Replace the cable (J112) that
connects between the KEY, LED
and MAIN BLOCK Assys.

NG

Replace the KEY Assy.

NG

Replace the MAIN BLOCK Assy.

Can the unit be turned on, using
RS-232C commands?

No

Replace the 50P cable (J203) that
connects between the REAR_IO
and MAIN BLOCK Assys.

NG

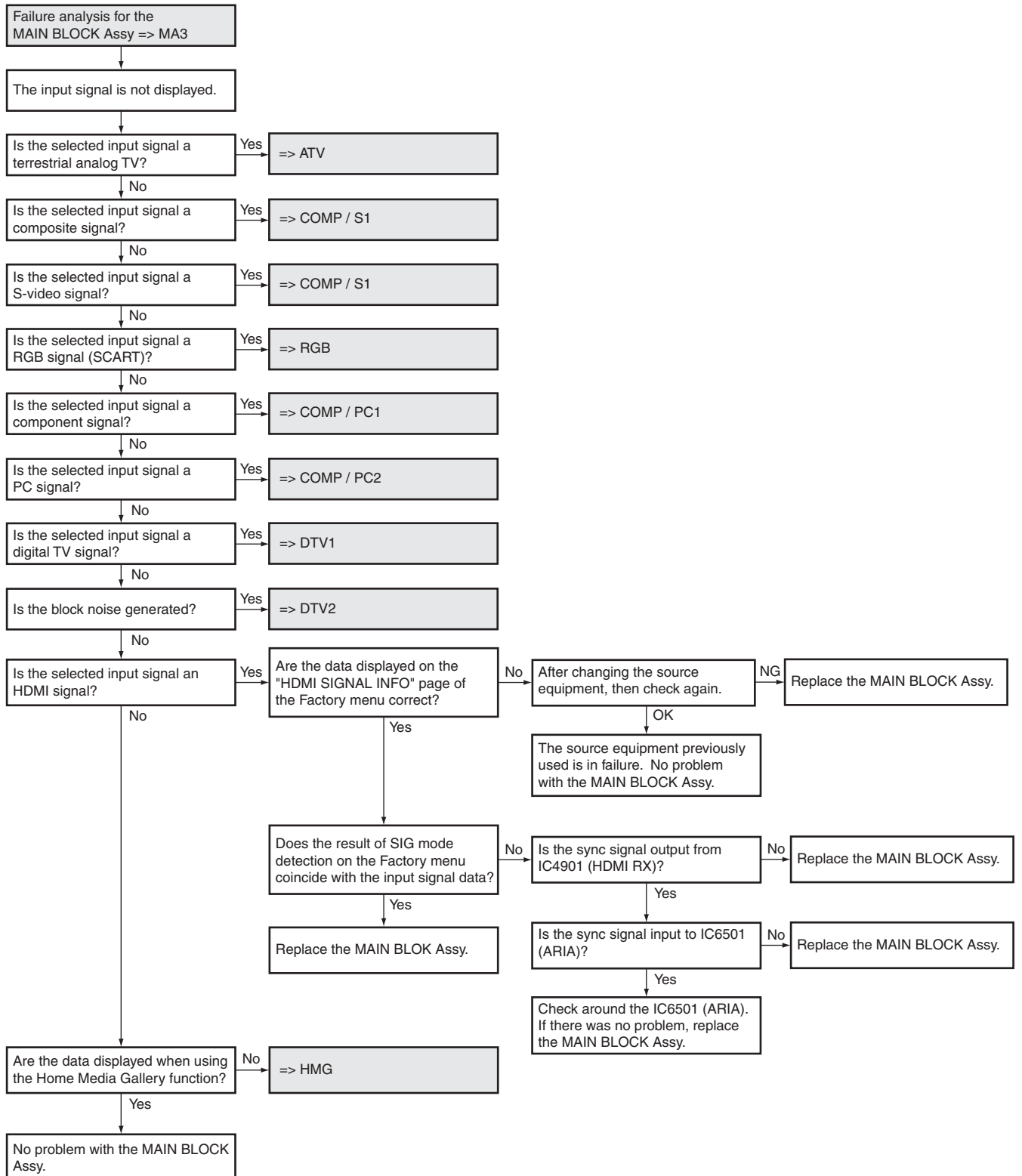
Replace the REAR_IO Assy.

NG

Replace the MAIN BLOCK Assy.

Replace the MAIN BLOCK Assy.

Flowchart of Failure Analysis for The MAIN BLOCK Assy



A

[4] VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System

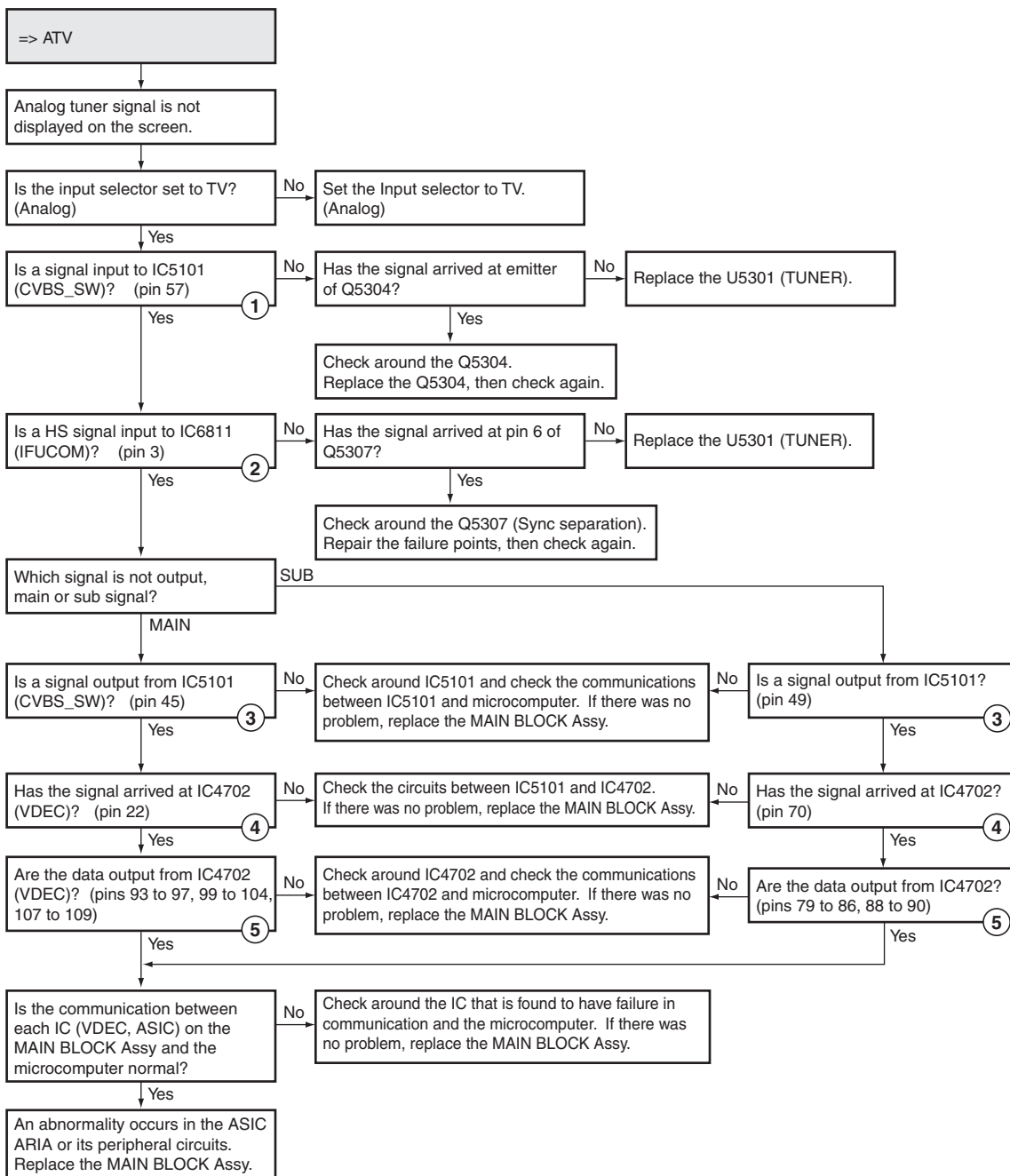
B

C

D

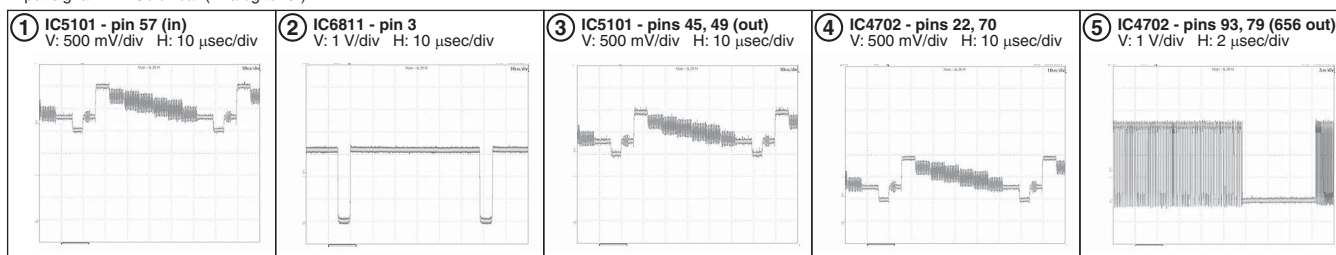
E

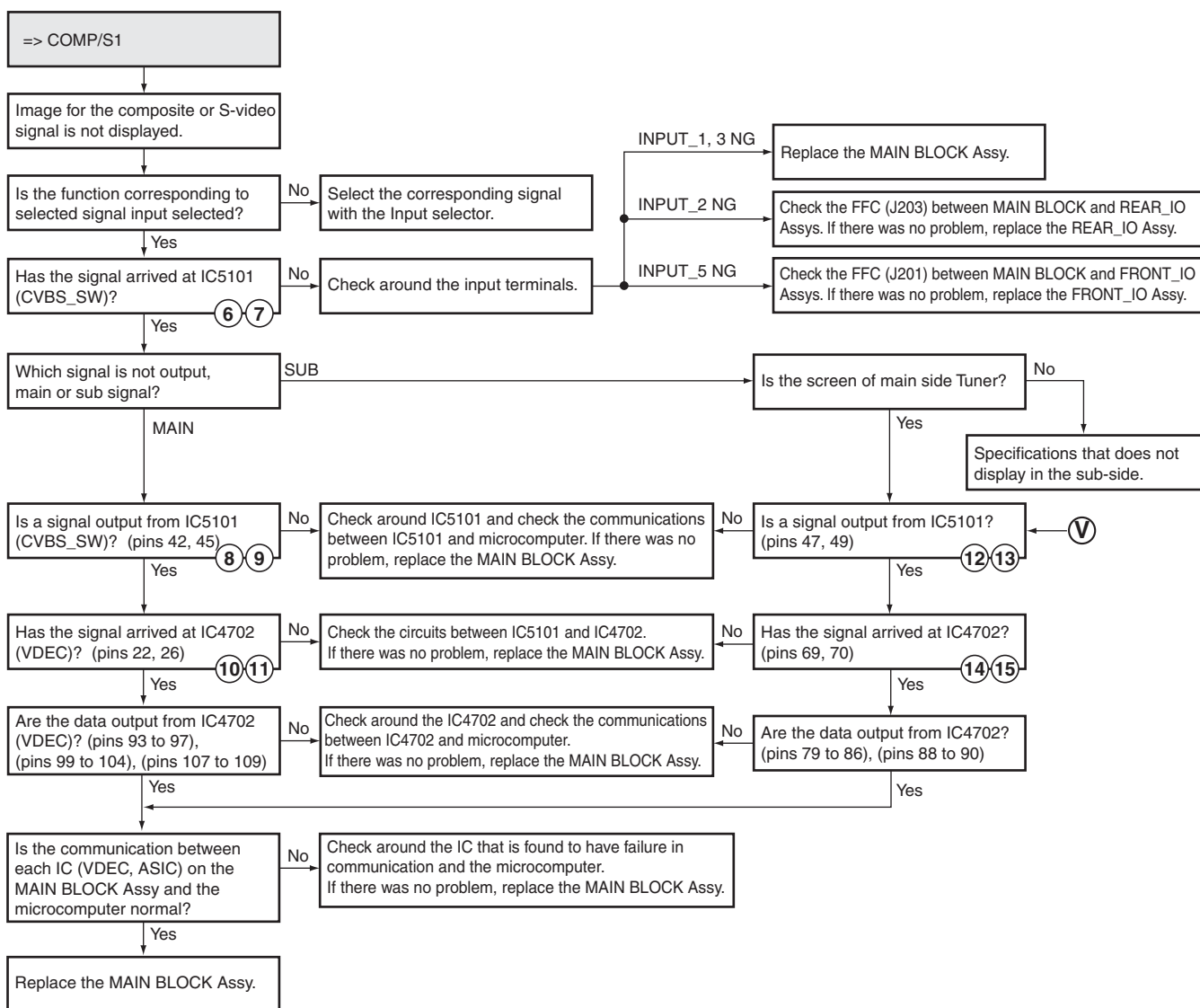
F



• Waveforms

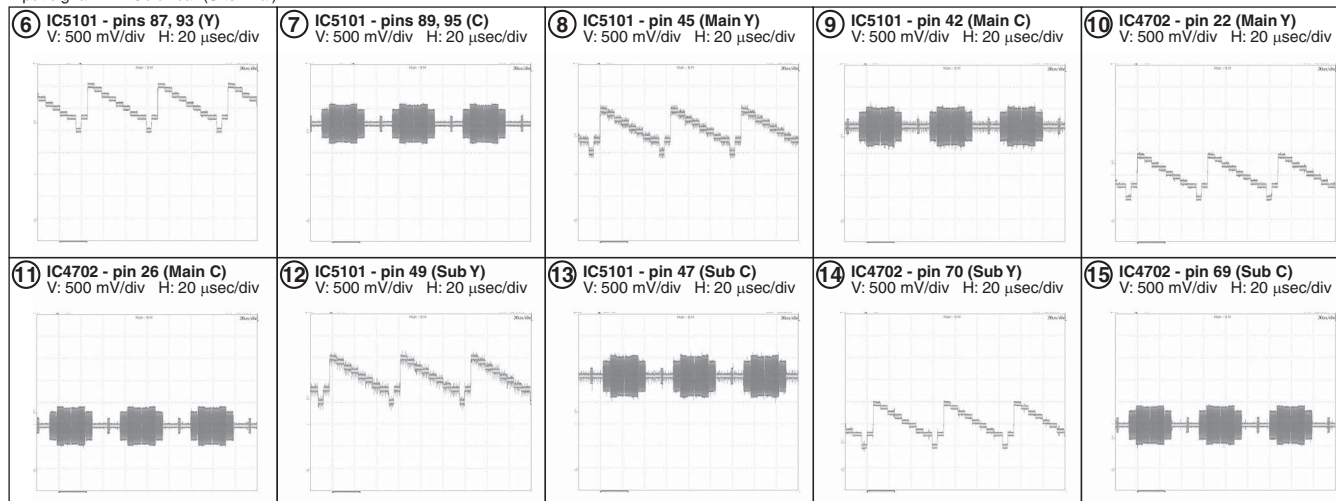
Input signal: PAL Color-bar (Analog tuner)





• Waveforms

Input signal: PAL Color-bar (S terminal)



A

=> RGB

Image for the RGB (SCART) input signal is not displayed.

Is the function corresponding to selected signal input selected?

No

Select the corresponding signal with the Input selector.

Yes

B

Which signal is not output, main or sub signal?

Sub

Is the screen of main side Tuner?

No

Specifications that does not display in the sub-side.

Main

Go to **V**.

Has the signal arrived at IC5501 (RGBSW)?

No

Check the circuits between JA7502 and IC5501. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is a signal output from IC5501? (pins 41, 43 and 45)

No

Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

16 **17** **18**

C

Has the signal arrived at IC4702? (pins 27, 28 and 65)

No

Check the circuits between IC5501 and IC4702. If there was no problem, replace the MAIN BLOCK Assy.

Yes

19 **20** **21**

Is the communication between each IC (VDEC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No

Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

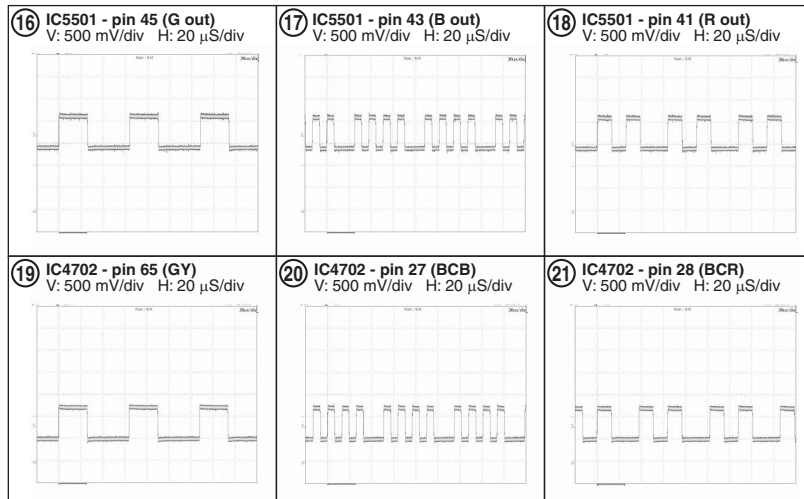
Yes

D

Replace the MAIN BLOCK Assy.

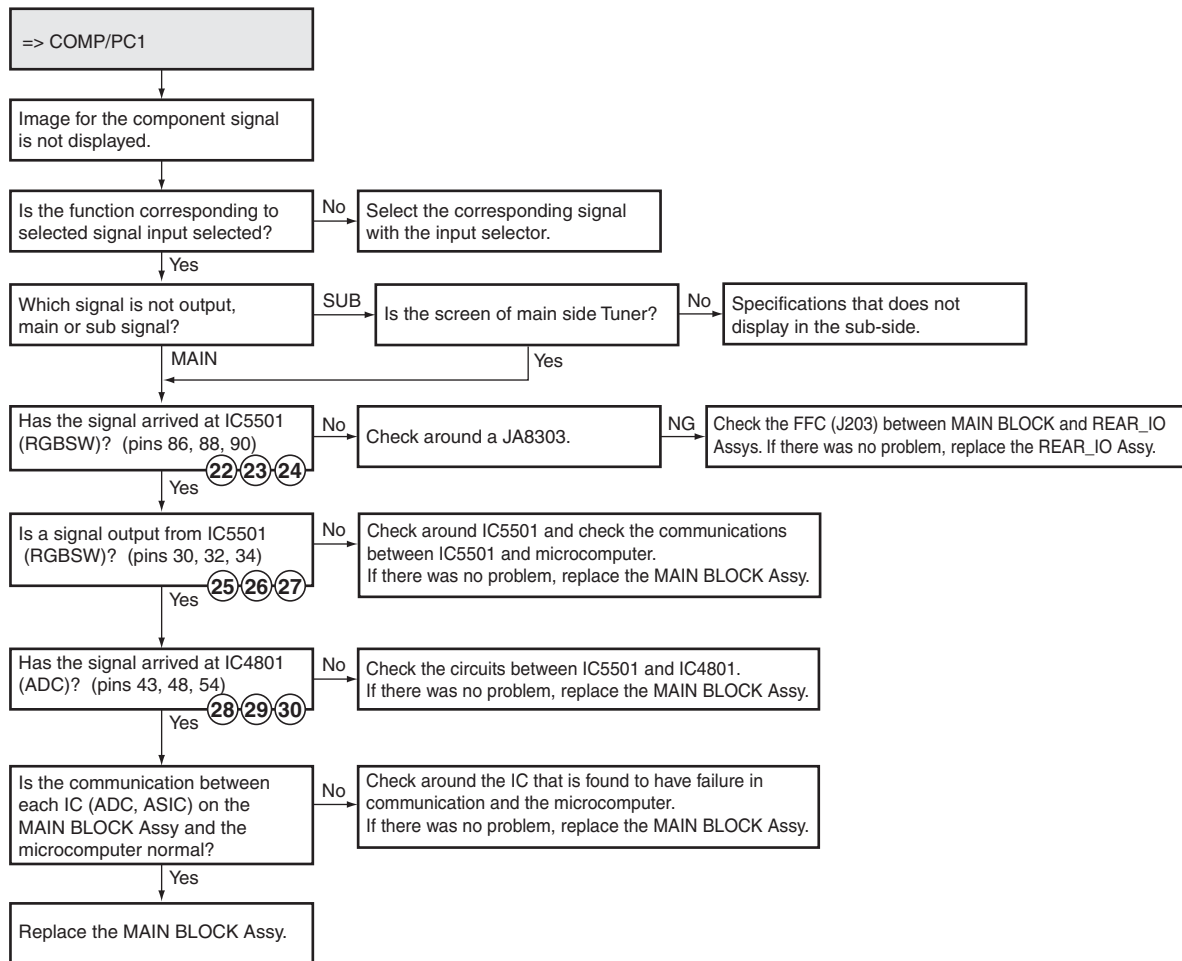
Waveforms

Input signal: PAL Color-bar (SCART RGB terminal)



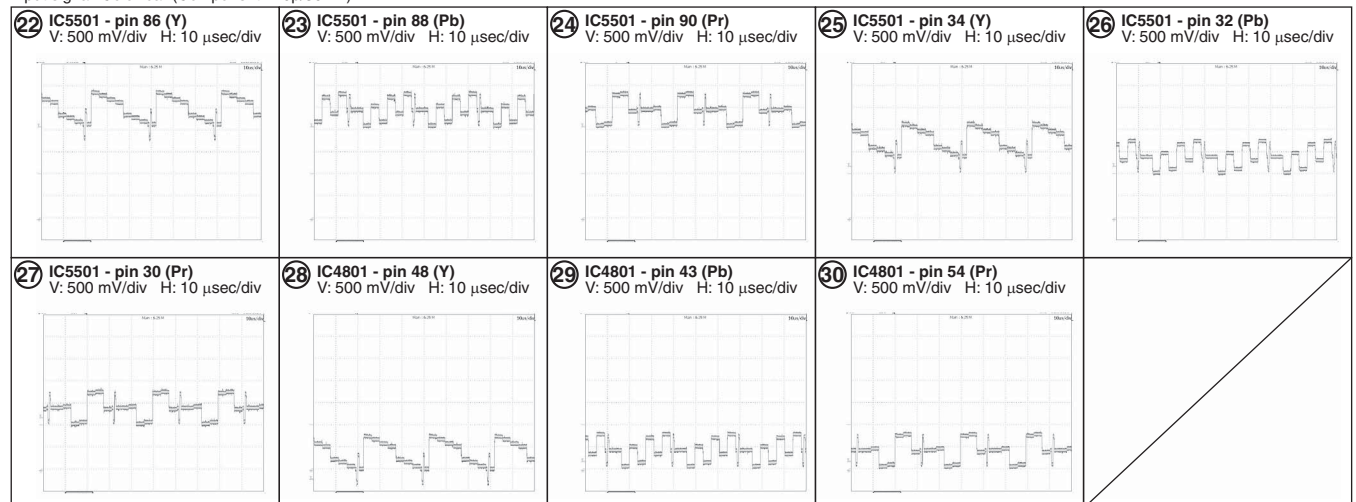
E

F



• Waveforms

Input signal: Color-bar (Component 720p/50 Hz)



A

=> COMP/PC2

Image for the PC signals is not displayed.

Is the function corresponding to selected signal input selected?

No
Select the corresponding signal with the input selector.

Yes

B

Which signal is not output, main or sub signal?

SUB
Is the screen of main side Tuner?

No
Specifications that does not display in the sub-side.

MAIN

Yes

Has the signal arrived at IC5501 (RBSW)? (pins 2, 4, 6, 14, 15)

No
Check around a CN8503.

NG
Check the FFC (J201) between MAIN BLOCK and FRONT_IO Assys. If there was no problem, replace the FRONT_IO Assy.

Yes

Is a signal output from IC5501 (RBSW)? (pins 30, 32, 34)

No
Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

C

Has the signal arrived at IC4801 (ADC)? (pins 43, 48, 54)

No
Check the circuits between IC5501 and IC4801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is the communication between each IC (ADC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

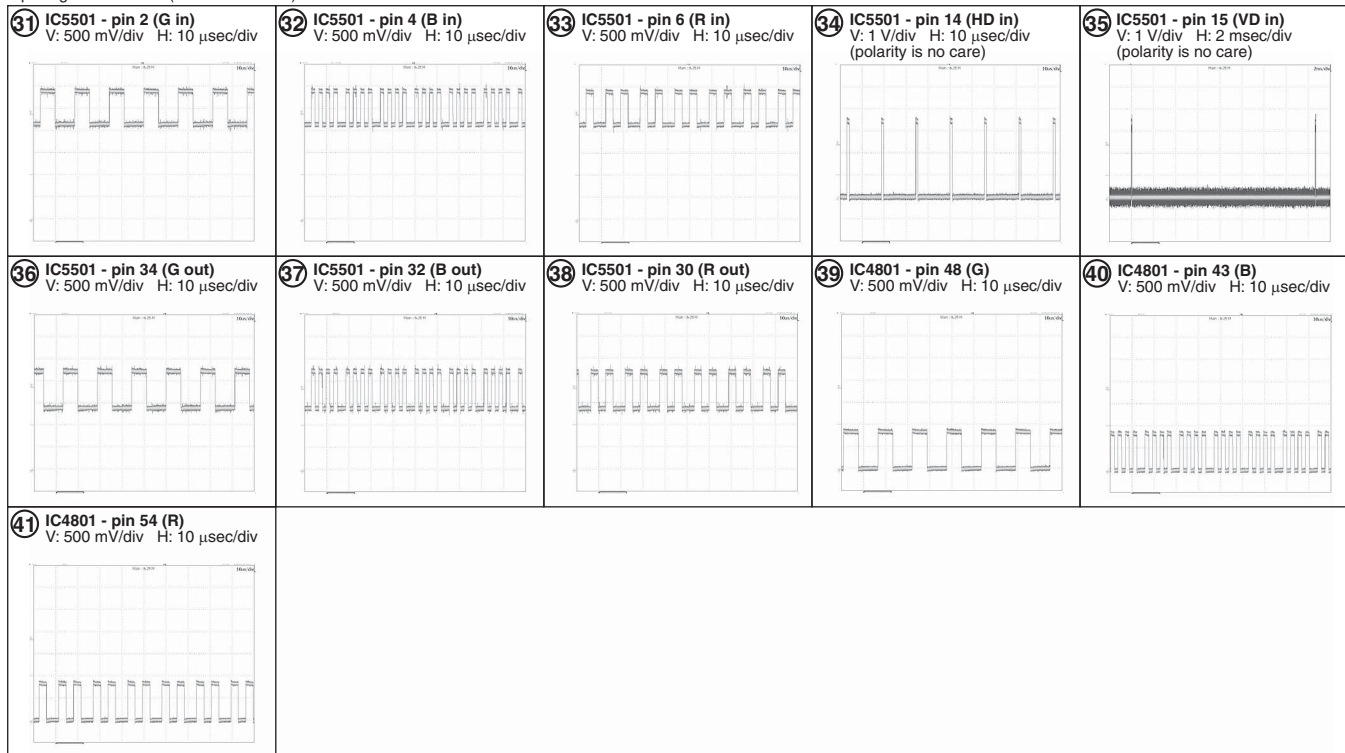
Yes

Replace the MAIN BLOCK Assy.

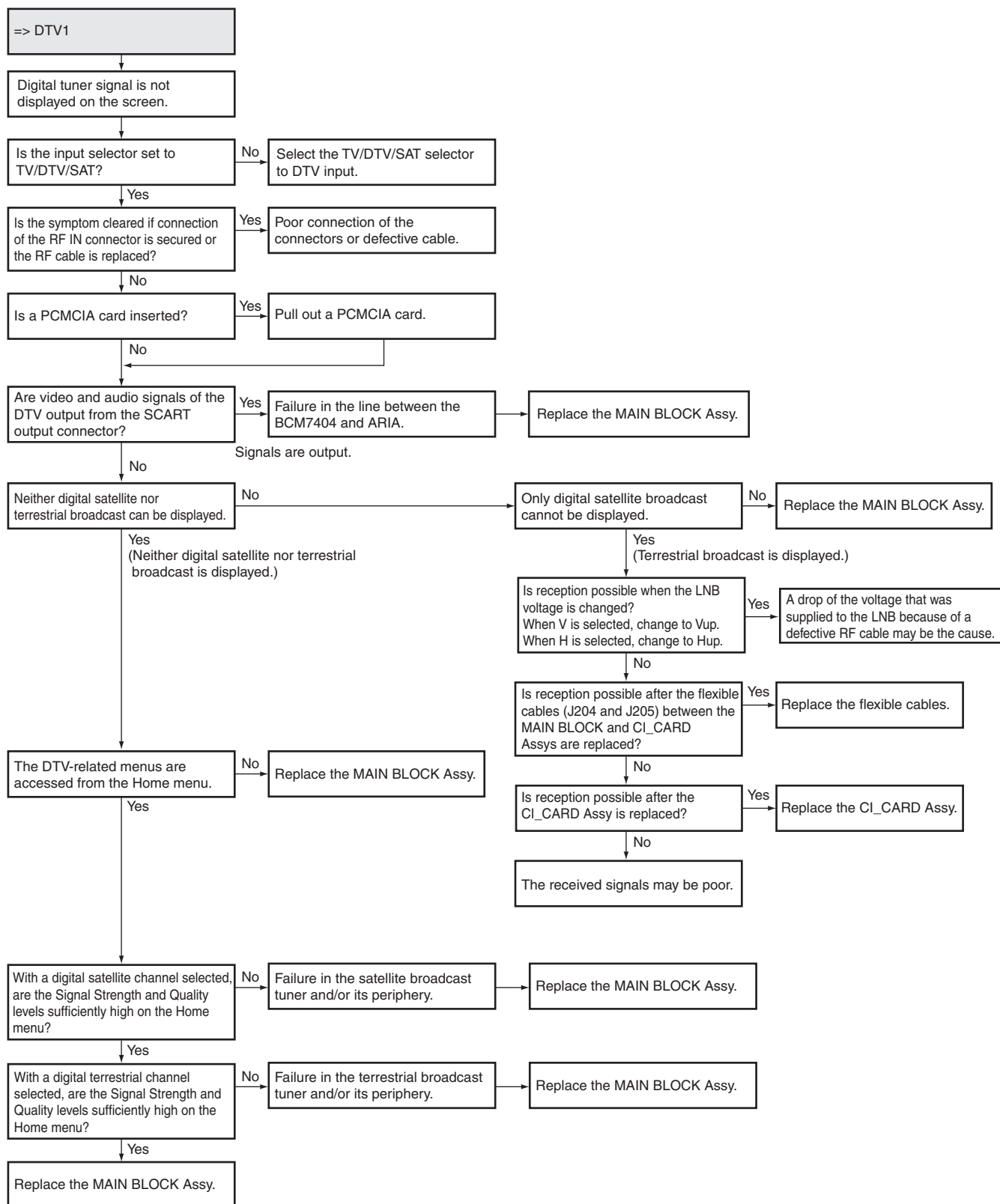
D

● Waveforms

Input signal: Color-bar (PC SXGA/60 Hz)



F



A

[Common to the DTVs 1 and 2] How to Display the DTB Service Menu

As you can display the DTB Service Menu from Factory mode, you should have a remote control unit that supports Factory mode.

Step 1: Press the **FACTORY** key on the remote control unit to display the **INFORMATION** screen in Factory mode.

Step 2: Press the **MUTING** key on the remote control unit 4 times to display the **INITIALIZE** screen.

Step 3: Press the **↓** key on the remote control unit twice so that **DTB SERVICE MODE (+)** is displayed at the bottom of the screen.

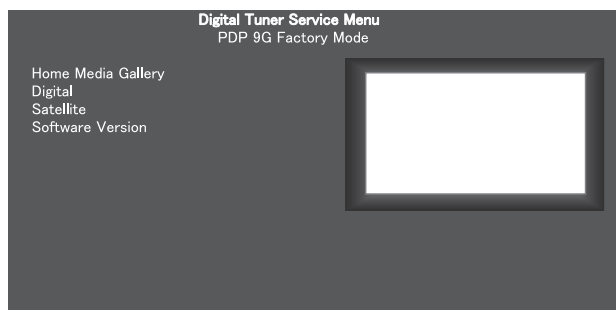
Step 4: Press the **ENTER/SET** key on the remote control so that **MODE SHIFT <=> :No** is displayed at the bottom of the screen.

Step 5: Press the **←** or **→** key on the remote control so that **MODE SHIFT <=> :YES** is displayed at the bottom of the screen.

Step 6: Press the **ENTER/SET** key on the remote control unit for 5 sec or more to display the DTB Service Menu.

B

Top page of the DTB Service Menu



C

Digital : Service menu for digital terrestrial broadcast reception

Satellite : Service menu for digital satellite broadcast reception

D

How to Change the LNB Voltage on the DTV Service Menu

On the Satellite screen of the DTV Service menu below, move the cursor to **LNB POWER** by using the **↓** key on the remote control unit then change the LNB voltage, using the **←** or **→** key.

D

The LNB voltage values are as shown below:

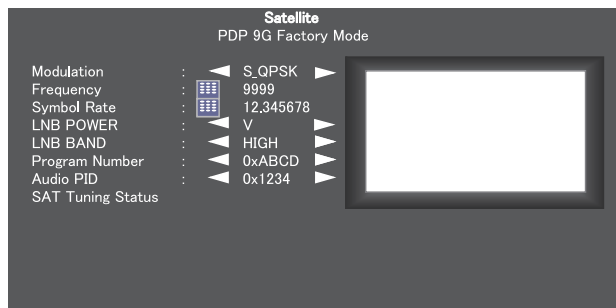
V: 13 V (Typ.)

H: 18 V (Typ.)

Vup: V+1 V

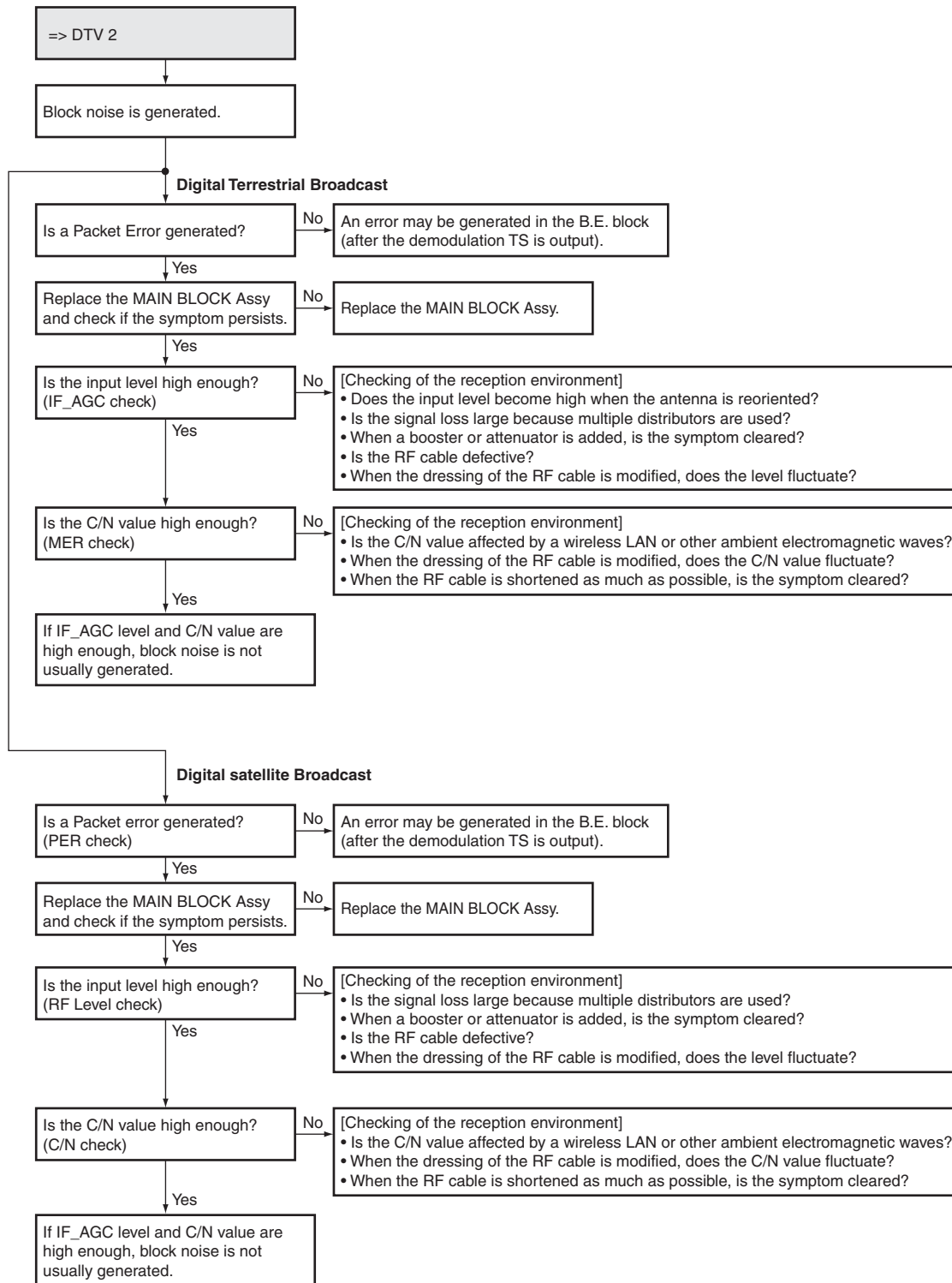
Hup: H+1 V

E



E

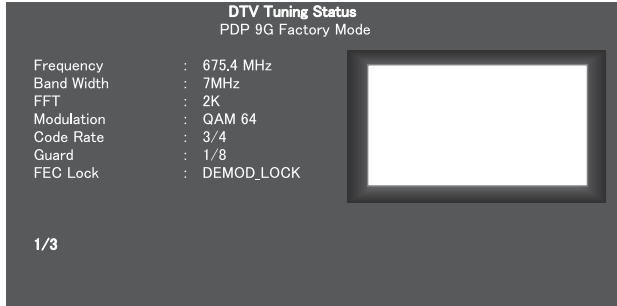
F



How to Confirm the DTV Tuning Status on the Digital Tuner Service Menu

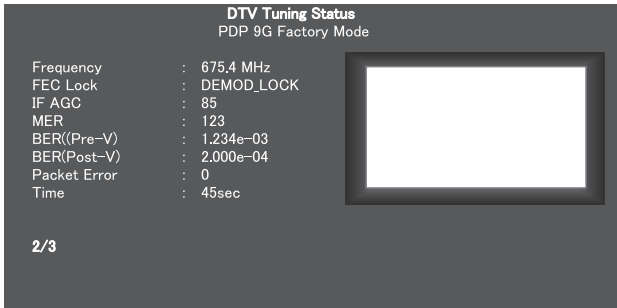
If block noise is generated, it is necessary to acquire the DTV Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the DTV Tuning Status for another reception frequency of the signal in which block noise is not generated. The DTV Tuning Status page to be acquired is shown below:

DTV Tuning Status (1/3)



Frequency : Frequency of the signal currently being received.
 Band Width : Bandwidth of the signal currently being received.
 FFT : FFT mode of the signal currently being received (2K or 8K).
 Modulation : Modulation method for the signal currently being received.
 Code Rate : Code Rate of the signal currently being received.
 Guard : Guard Interval of the signal currently being received.
 FEC Lock : Current lock status of the receiver. The available lock statuses are as shown below:
 DEMOD_LOCK
 FEC_LOCK
 DRX_LOCK
 UNLOCK

DTV Tuning Status (2/3)



IF AGC : IF AGC level of the signal currently being received.
 The AGC-level limits in normal reception are shown below.
 Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Code Rate	Signal-level Limit in Normal Reception
QPSK	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
16QAM	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
64QAM	1/2	100
	2/3	58
	3/4	56
	5/6	55
	7/8	54

BER (Pre-V) : Pre-Viterbi Bit Error Rate of the signal currently being received.
 BER (Post-V) : Post-Viterbi Bit Error Rate of the signal currently being received. If the value is 2.000E-04, block noise is not caused by a problem in the tuner.
 Packet Error : Packet error count of the signal currently being received. If the packet error count is "0," block noise caused by the tuner will not be generated.
 Time : Measured duration of BER (Pre-V), BER (Post-V), or Packet Error. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

MER : Quality of the signal currently being received.
 The signal qualities in normal reception are shown below.
 Use the following values only as a guide.

Modulation	Code Rate	MER Limit in Normal Reception
QPSK	1/2	93
	2/3	85
	3/4	67
	5/6	76
	7/8	82
16QAM	1/2	98
	2/3	116
	3/4	127
	5/6	138
	7/8	145
64QAM	1/2	140
	2/3	170
	3/4	184
	5/6	197
	7/8	206

DTV Tuning Status (3/3)

DTV Tuning Status

PDP 9G Factory Mode

Program Number : 0x0101

Video PID : 0xABCD

Audio PID : 0x1234

PCR PID : 0x5678

Video Format : 1080i@60

Aspect : 16 : 9

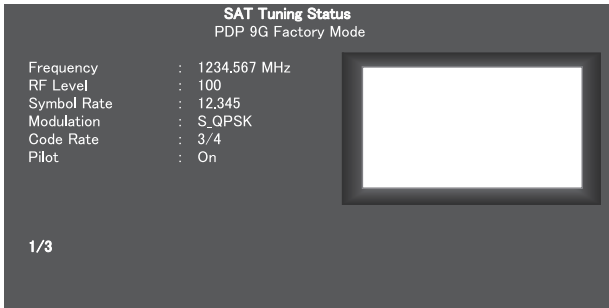
3/3

Program Number : No. of the program currently being received.
Video PID : Video PID of the program currently being received.
Audio PID : Audio PID of the program currently being received.
PCR PID : PCR PID of the program currently being received.
Video Format : Video Format of the program currently being received.
Aspect : Aspect ratio of the program currently being received.

How to Confirm the SAT Tuning Status on the Digital Tuner Service Menu

If block noise is generated, it is necessary to acquire the SAT Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the SAT Tuning Status for another reception frequency of the signal in which block noise is not generated. The SAT Tuning Status page to be acquired is shown below:

SAT Tuning Status (1/3)

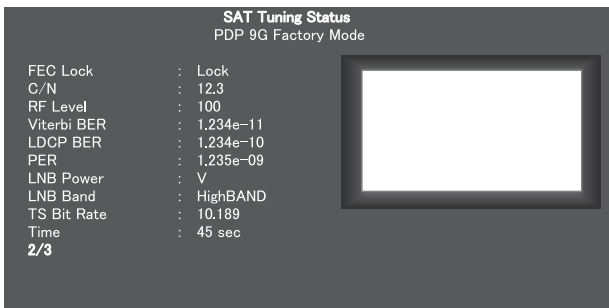


Frequency : Frequency of the signal currently being received.
RF Level : Level of the signal currently being received.
The signal-level limits in normal reception are shown below. Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Signal-level Limit in Normal Reception
S2_QPSK	50 to 75
S2_8PSK	50 to 75
S_QPSK	50 to 75

Modulation : Modulation method for the signal currently being received.
Symbol Rate : Symbol Rate of the signal currently being received.
Code Rate : Code Rate of the signal currently being received.
Pilot : On/off status of the Pilot signal currently being received.

SAT Tuning Status (2/3)



FEC Lock : Current lock/unlock status of the error-correction function of the receiver.
C/N : Current reception C/N. The limit C/Ns in normal reception are shown below. Use the following values only as a guide.

Limit C/N in normal reception

Modulation	Code Rate	Limit C/N in Normal Reception	Modulation	Code Rate	Limit C/N in Normal Reception
S2_QPSK	1/2	1.1	S2_8PSK	3/4	8.1
S2_QPSK	3/5	2.4	S2_8PSK	5/6	9.6
S2_QPSK	2/3	3.2	S2_8PSK	8/9	11.0
S2_QPSK	3/4	4.2	S2_8PSK	9/10	11.3
S2_QPSK	4/5	4.8	S_QPSK	1/2	5.2
S2_QPSK	5/6	5.3	S_QPSK	2/3	7.0
S2_QPSK	8/9	6.4	S_QPSK	3/4	8.0
S2_QPSK	9/10	6.6	S_QPSK	5/6	9.1
S2_8PSK	3/5	7.9	S_QPSK	7/8	9.8
S2_8PSK	2/3	8.0			

Viterbi BER : Bit error rate while the S_QPSK signal is being received. While the S2_QPSK or S2_8PSK signal is received, **** is displayed. If the value is 2e-4 or less, block noise is not caused by a problem in the tuner.

LDOP BER : Bit error rate while the S2_QPSK or S2_8PSK signal is being received. While the S_QPSK signal is received, **** is displayed.

PER : Packet error rate during reception. If the value is 0.000e-00, block noise is not caused by a problem in the tuner.

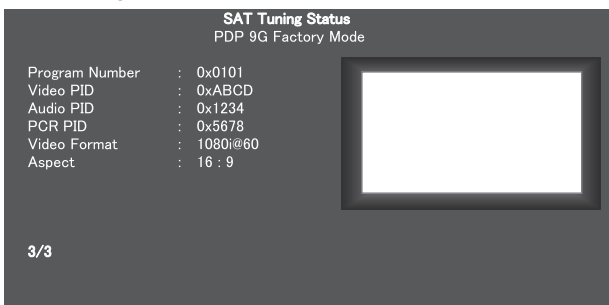
LNB POWER: Voltage currently being supplied to the LNB

LNB BAND : Frequency band that is currently set to the LNB

TS Bit Rate : TS Bit Rate of the signal currently being received

Time : Measured duration of Viterbi BER, LDOP BER, or PER. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

SAT Tuning Status (3/3)



Program Number : No. of the program currently being received.

Video PID : Video PID of the program currently being received.

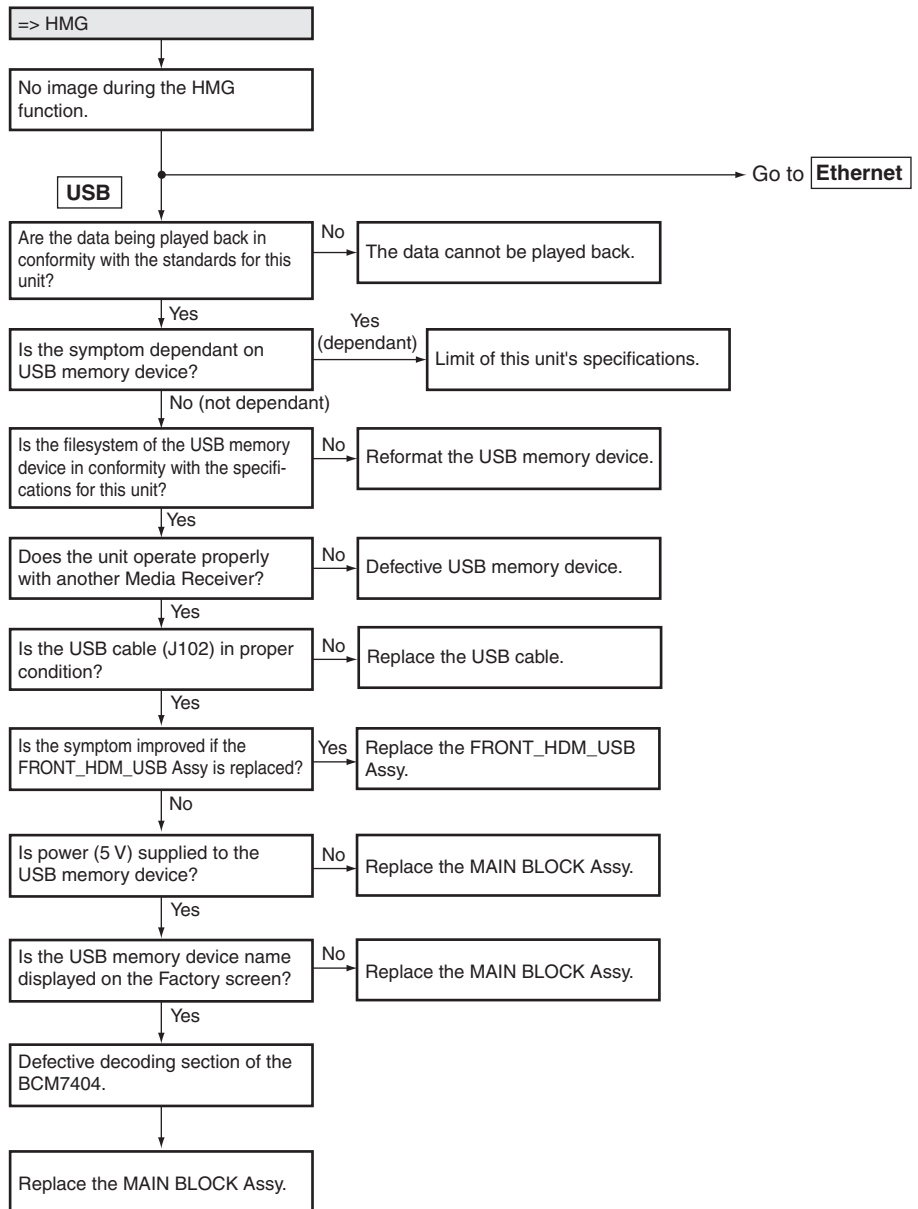
Audio PID : Audio PID of the program currently being received.

PCR PID : PCR PID of the program currently being received.

Video Format : Video Format of the program currently being received.

Aspect : Aspect ratio of the program currently being received.

Flowchart of Failure Analysis for The HMG



A

B

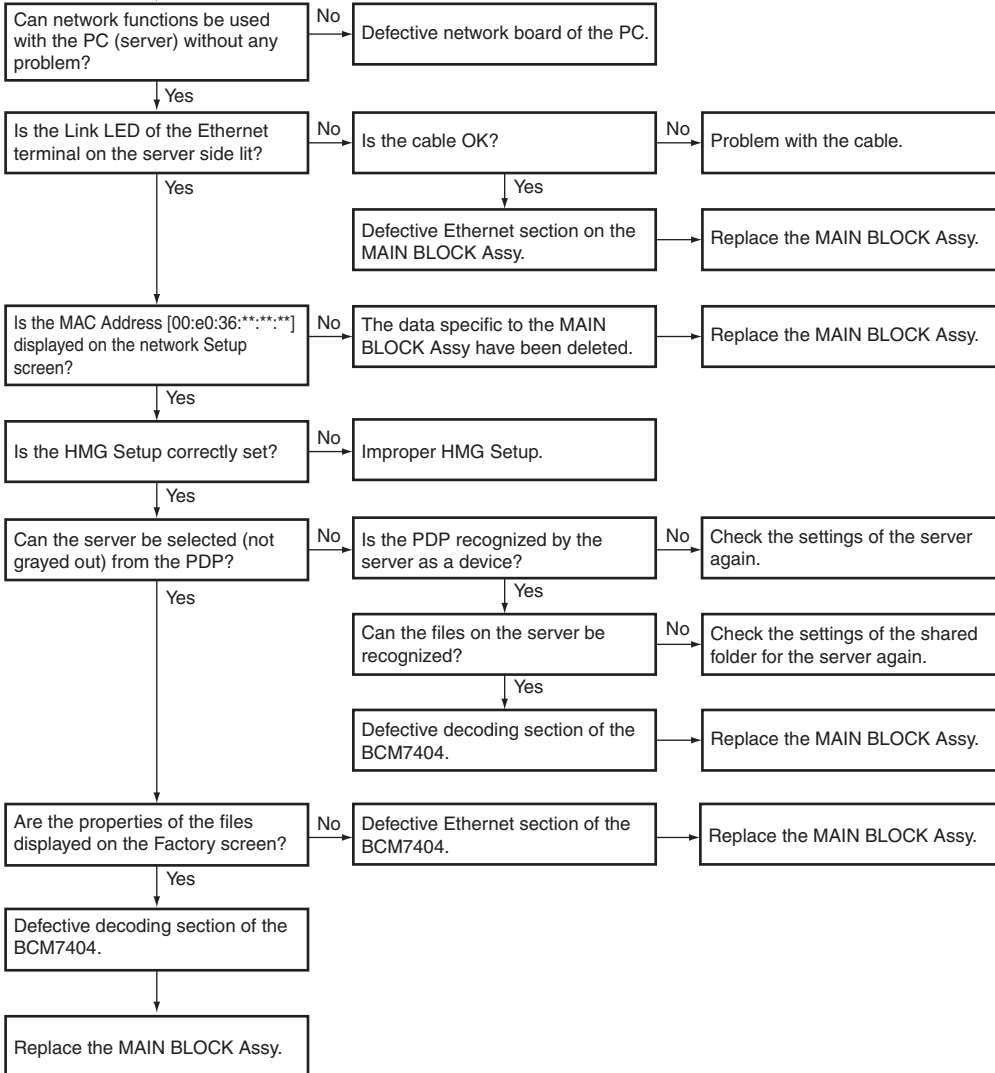
C

D

E

F

Ethernet



[HMG] How to enter DTB Service menu

Note: Use the remote control unit that supports Factory mode, because the DTB Service menu is accessible from Factory mode.

Step 1: Press the FACTORY key on the remote control unit to display the INFORMATION screen of Factory mode.

Step 2: Press the MUTING key on the remote control unit 4 times to display the INITIALIZE screen.

Step 3: Press the ↓ key on the remote control unit twice to display the “DTB SERVICE MODE (+)” indication at the bottom of the screen.

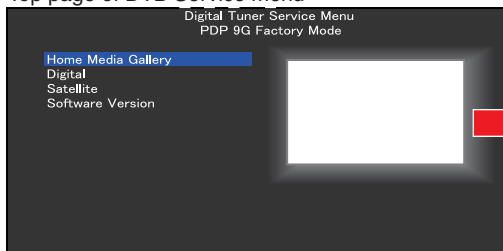
Step 4: Press the ENTER/SET key on the remote control unit to display the “MODE SHIFT <=>: No” indication at the bottom of the screen.

Step 5: Press the ← or → key on the remote control unit until the “MODE SHIFT <=>: YES” indication is displayed at the bottom of the screen.

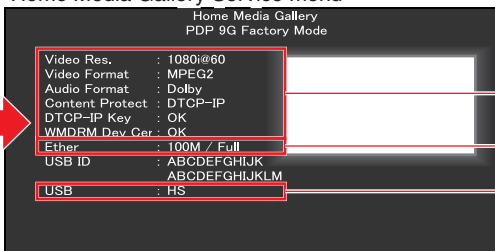
Step 6: Press and hold the ENTER/SET key on the remote control unit pressed for 5 seconds or more to activate DTB Service menu.

The Home Media Gallery (HMG) Service menu is indicated below:

Top page of DTB Service menu



Home Media Gallery Service menu



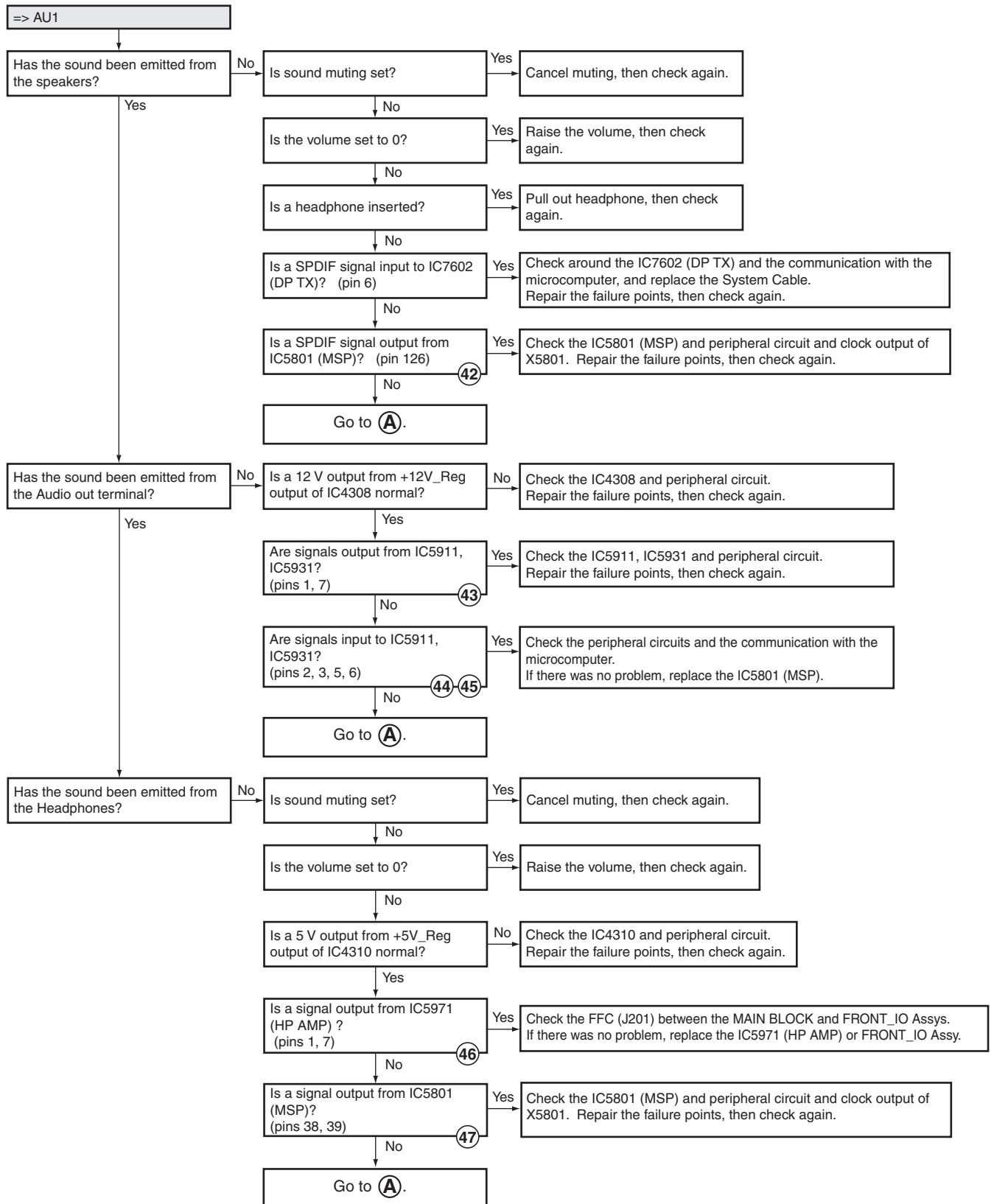
Content data

Ethernet connection information

USB device information

[5] AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System



A

A

Has the sound of the Analog broadcasting output?

No
Is a SIF signal input to IC5801? (pin 68)

No
Check the communications between the U5301 (FRONTEND) and the microcomputer and between the U5301 and IC5801. If there was no problem, replace the U5301 (FRONTEND), then check again.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

B

Has the sound of the Digital broadcasting output?

No
Is a I2S signal input to IC5801 (MSP)? (pins 100 to 102)

No
Is a signal output from IC6001 (BCM7404) of the MAIN BLOCK Assy?

No
Repair the DTB block or replace the MAIN BLOCK Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

Yes
Check around IC6001 (BCM7404) and repair the failure points, then check again.

C

Has the sound of the HDMI output?

No
Check that the HDMI switch of the MENU is properly set.

No
Set a MENU definitely, then check again.

Yes

Yes
Is a SPDIF signal output from IC4901 (HDMI RX)? (pin 78)

INPUT_1, 3, 4 No
Check the circuits between IC5001 (HDMI SW) and IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

51

INPUT_5 No
Check the FFC (J101) between MAIN BLOCK and FRONT_HDM_USB Assys. If there was no problem, replace the FRONT_HDM_USB Assy.

Yes

Is a SPDIF signal input to IC5801 (MSP)? (pin 4)

No
Check the communications around the IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

D

Has the sound of the INPUT 1, 3 (SCART) output?

No
Is a signal input to IC5801? (pins 24, 25, 36, 37)

No
Check the circuits between JA7502 (SCART) and IC5801. If there was no problem, replace the MAIN BLOCK Assy.

52

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

Has the sound of INPUT 2 (SCART, RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 26, 27, 34, 35)

No
Check the FFC (J203) between the MAIN BLOCK and REAR_IO Assy. If there was no problem, replace the REAR_IO Assy.

52

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

E

Has the sound of INPUT 5, PC (RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 30, 31)

No
Check the FFC (J201) between the MAIN BLOCK and FRONT_IO Assy. If there was no problem, replace the FRONT_IO Assy.

52

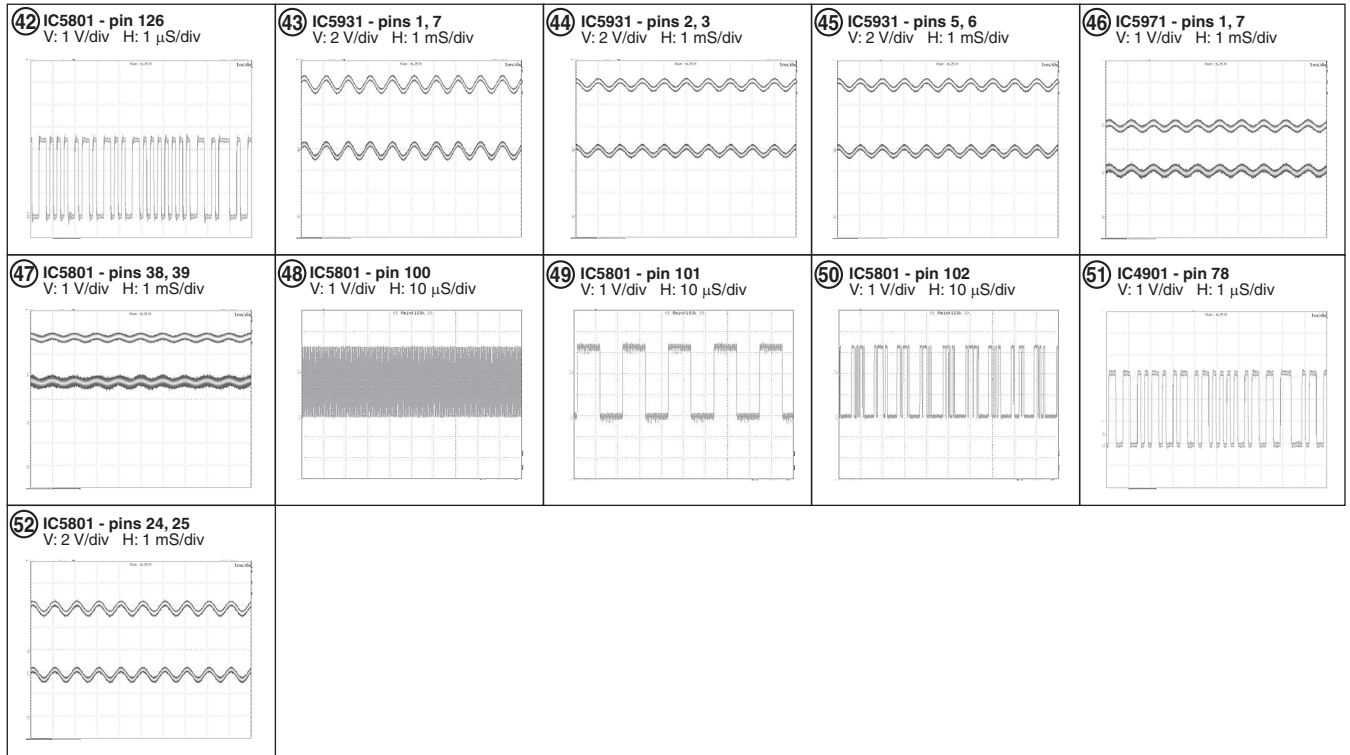
Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

F

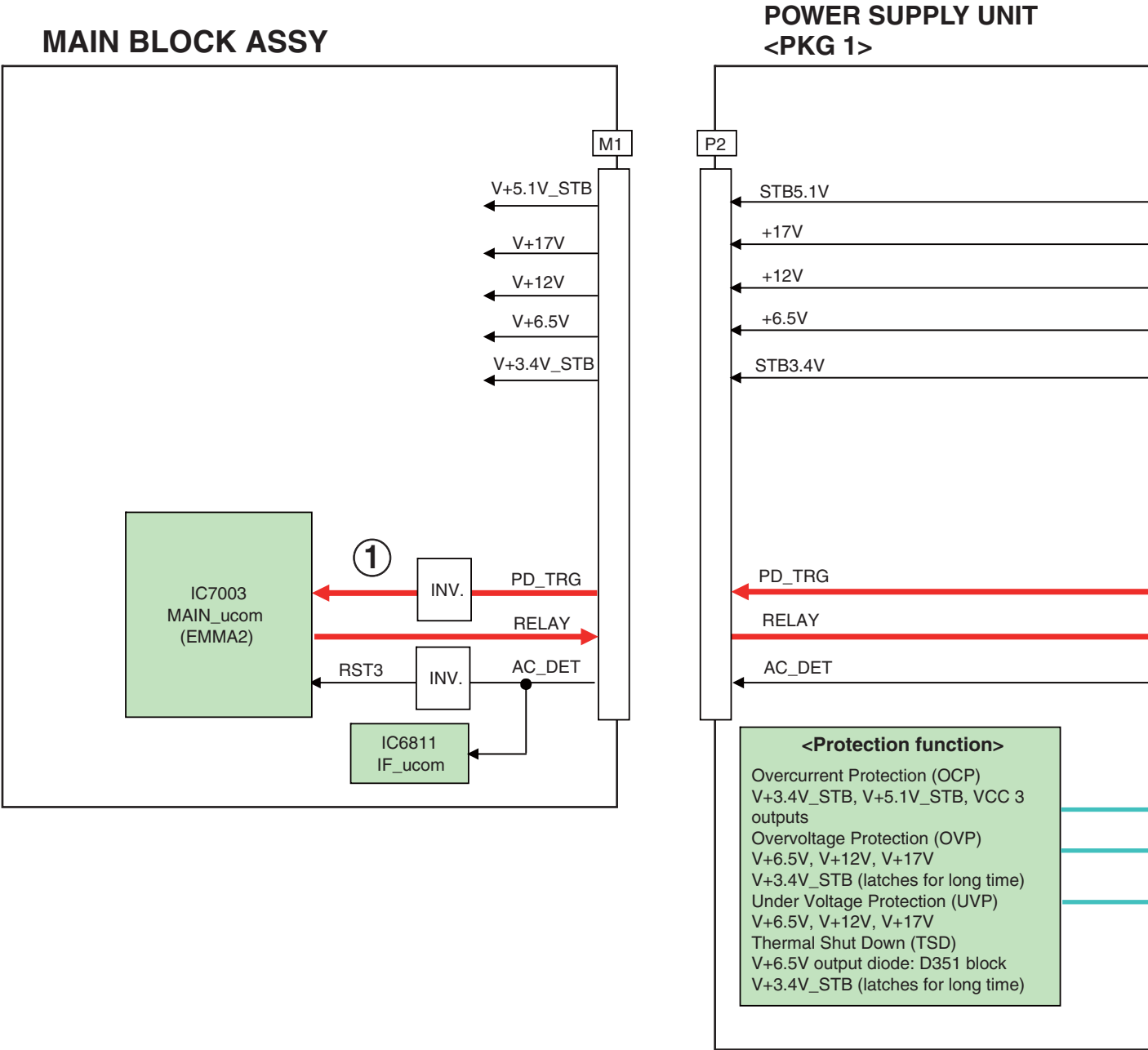
• Waveforms

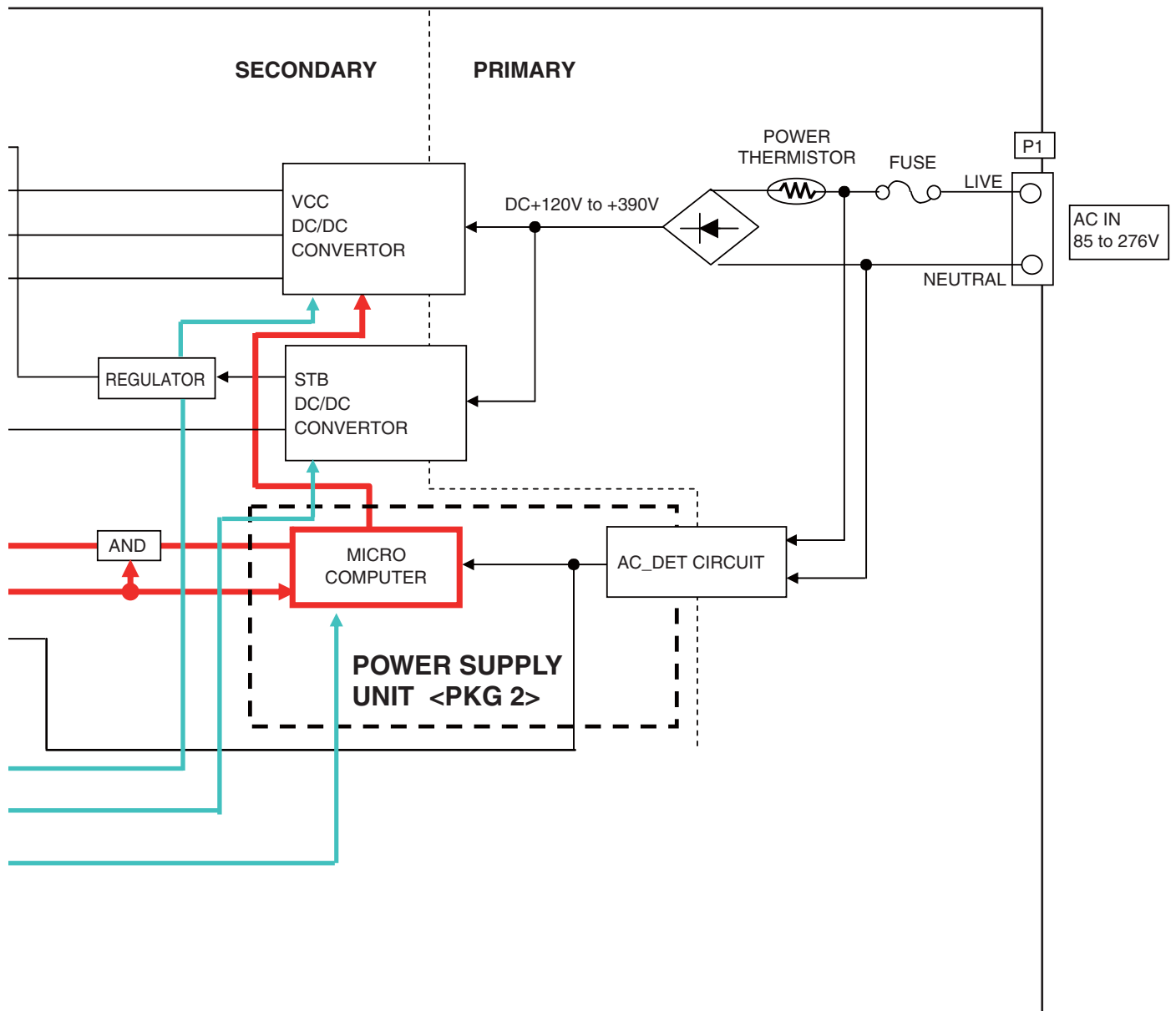
Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



[1] BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

Note:
The figure ① indicate the number of times the Red LED flashes when power-down occurs in the corresponding route.





[2] PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

How to Distinguish the PD (Power-Down)

About the LED for checking causes of power-down

No LED for checking causes of power-down is provided for the POWER SUPPLY Unit of the MR. However, by checking the waveforms at terminals of the microcomputer, whether a power-down was caused by failure in the POWER SUPPLY Unit, and if it was, which power system among the four was in failure can be inferred. The points at which to check waveforms and how to distinguish power-down causes are described below:

<Points at which to Check Waveforms>

Waveforms between Pin 3 of CN801 and GND (secondary radiator, display chassis, etc.)

Refer to the section "Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup" in the "7.2 DISASSEMBLY".

<How to Distinguish>

If a power-down was caused by failure in the POWER SUPPLY Unit, a pulse waveform is output at the above-mentioned points. (It is assumed that STB3.4 V power is properly output.)

By counting the frequency of "Lo" in the pulse waveform, the cause of power-down can be identified.

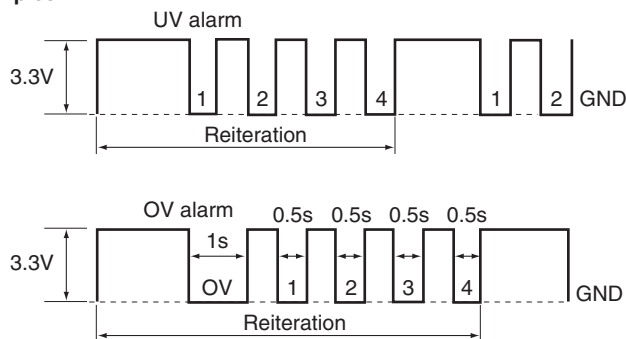
Frequency of "Lo"	Cause	
	Output Voltage	Overvoltage (OV) or Undervoltage (UV)
Once	+12V	OV or UV *
Twice	+17V	OV or UV *
3 times	+6.5V	OV or UV *
4 times	Protection against overheat	

*How to distinguish OV and UV:

If the first "Lo" duration of a pulse is long (1 s), the cause is OV.

As the three output voltages are electromagnetically linked and interact with one another, the frequency may vary among 1-3, depending on the type of power-down.

Examples:



How to Diagnose the PD

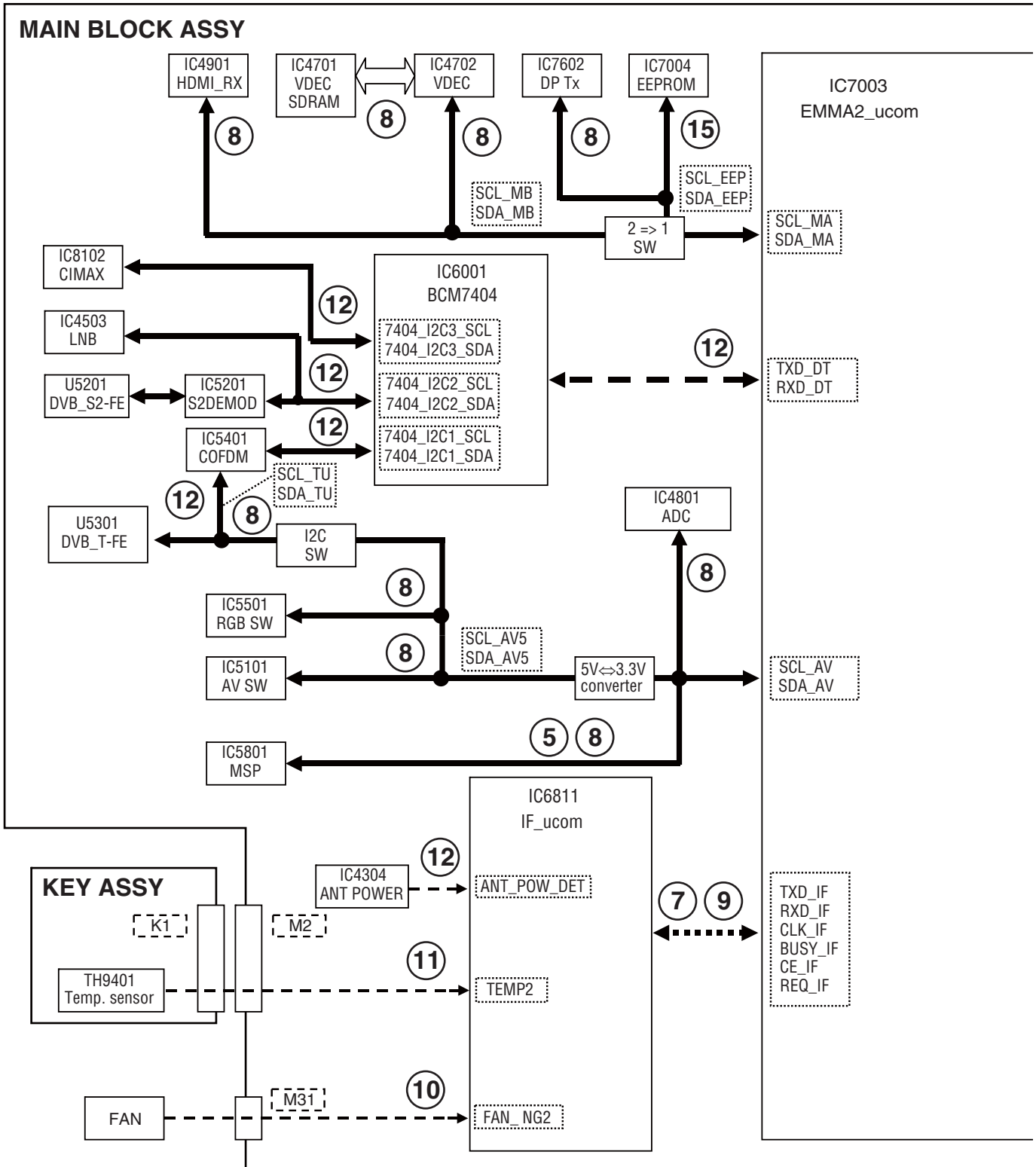
Frequency of LED Flashing	History Indication in Factory Mode	Assy	Cause of power-down (activated protection circuit)	Point to be Checked	Possible Defective Parts
Red, once	MR-PWR	MAIN BLOCK Assy	Overcurrent in 6.5 V power	5V_ANT-REG	IC4305, C4305
				5V_IO-REG	IC4310, C4301
				3CH-DD converter	IC4402 C4405, C4406, C4409, C4463, C4464, C4466 to C4468
				FET	Q4417, Q4416, Q4411
				1CH-DD converter	IC4501, C4517
			Overcurrent in 12 V power	FAN-REG	IC4302, C4342
				8V_IO-REG	IC4309, C4315
				LNB	IC4503
			Overcurrent in 17 V power	12V_IO-REG	IC4308, C4303
			Overcurrent in 3.4 V power	1.8V_IO-REG	IC4604, C4609 C4820, C8103
		POWER SUPPLY Unit	V+6.5V UVP	TP V+6.5V	Voltage drop due to overcurrent on the load side
			V+12V UVP	TP V+12V	Voltage drop due to overcurrent on the load side
			V+17V UVP	TP V+17V	Voltage drop due to overcurrent on the load side
			STB3.4V OCP	TP STB3.4V	C151, C153, C152, D152, or Z152, and abnormal current on the load side that is connected to STB3.4 V power
			STB5.1V OCP	TP STB5.1V	C155 and abnormal current on the load side that is connected to STB5.1 V power And abnormal current on the load side that is connected to STB5.1 V power
			VCC OCP	TP V+6.5V	D351, C351, C352, C353, and abnormal current on the load side that is connected to V+6.5V power
				TP V+12V	D352, C357, C358, and abnormal current on the load side that is connected to V+12V power
				TP V+17V	D353, C359, and abnormal current on the load side that is connected to V+17V power
			STB3.4V OVP	TP STB3.4V	PC121
			VCC OVP	TP V+6.5V TP V+12V	PC301, Breakage in the line to/from the P2 output connector
			STB3.4V TSD		Z121 control IC and abnormal current on the load side that is connected to STB3.4 V power
			V+6.5V Rectifier diode (D351) TSD		D351 or D352, and abnormal current on the load sides that is connected to V+6.5 V and V+12 V

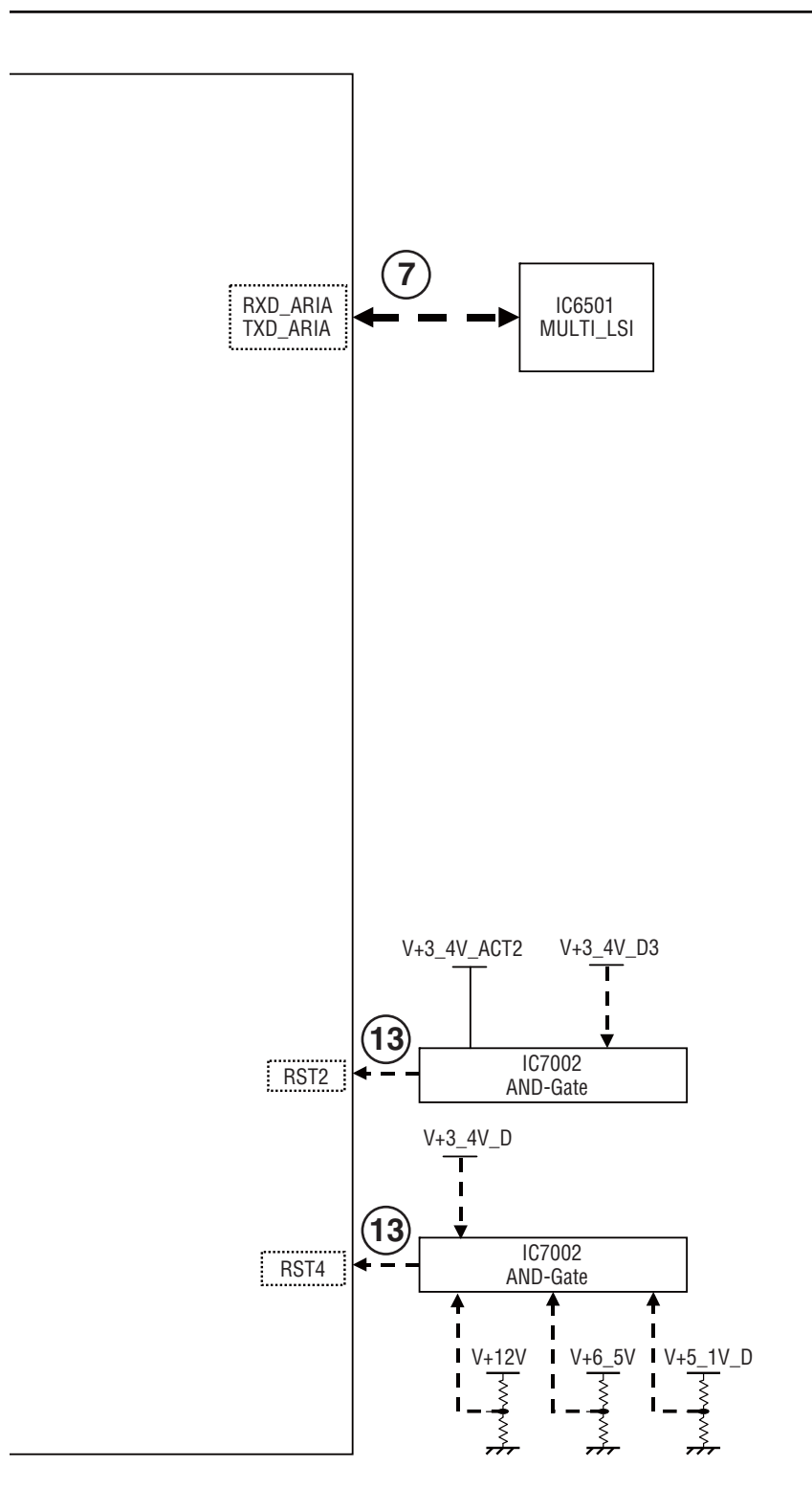
Note: Although replacement of the whole POWER SUPPLY Unit is required (replacement of only defective parts on the POWER SUPPLY Unit is not possible), the circuit symbols are described for reference

5.4 DIAGNOSIS OF SD (SHUTDOWN)

[1] BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

Note : The figures ① to ⑮ indicate the number of times the Blue LED flashes when shut-down occurs in the corresponding route. ⑫ LED is not flashed.





[2] SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		
			MAIN	SUB	
Blue 5	Audio	Abnormality in MSP	AUDIO	MSPMAP	
Blue 7	Failure in 3-wire serial communication with the main microcomputer	IF microcomputer	MA-3L	IF	
		MULTI		MULTI	
Blue 8	Failure in IIC communication with the main microcomputer	Tuner1	MA-IIC	FE1	
		MSP/MAP		MSPMAP	
		AV Switch		AV-SW	
		RGB Switch		RGB-SW	
		Main VDEC		VDEC	
		VDEC SDRAM		SDRAM	
		AD/PLL		ADC	
		HDMI		HDMI	
		DisplayPort Tx		DP-TX	
Blue 9	Failure in communication with the main microcomputer	—	MAIN	—	
Blue 10	Abnormality in FAN	FAN2	FAN	FAN2	
Blue 11	High temperature of the unit	—	TEMP2	—	
Blue 12 (Actually, Blue 12 LED is not flashed.)	Digital Tuner	DTV start up error	DTUNER	PS/RST	
		DTV communication error		RETRY	
		DEVICE ERR		DEVICE	
		Tuner1		DE-FE	
		DTV Antenna		D-ANT	
		Application		DTVAPP	
		COFDM		DEMODO	
		Tuner S2		DE-FES	
		S2DEMODO		DEMODO	
		LNB		DE-LNB	
		S2 Antenna		S-ANT	
Blue 13	Failure in the power supply	DC-DC Converter power decrease	RST-MA	M-DCDC	
		POWER SUPPLY		RELAY	
Blue 15	Main EEPROM	Main EEPROM communication error	MA-EEP	—	

A

Checkpoint	Possible Defective Part	Remarks
Power supply for MSP and MSP	IC5801, IC4604, Q4616	Check the MSP, its power and periphery parts (e.g. reset line).
Communication line between IF and MAIN	IC7003, IC6811	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Communication line between MULTI and MAIN	IC7003, IC6501	Check the communication lines (TXD_ARIA/RXD_ARIA)
IIC communication line between Tuner and MAIN	U5301, IC7003	Check the communication lines (SCL_TU/SDA_TU or SCL_AV/SDA_AV)
IIC communication line between MSP/MAIN and MAIN	IC5801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between AV_SW and MAIN	IC5101, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between RGB_SW and MAIN	IC5501, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between M_VDEC and MAIN	IC4702, IC7003	Check the communication lines (SCL_MB/SDA_MB)
Communication line between VDEC and SDRAM	IC4701, IC4702	Check the communication lines (SDRAM), Failure in SDRAM
IIC communication line between ADC and MAIN	IC4801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between HDMI_RX and MAIN	IC4901, IC7003	Check the communication lines (SCL_MB/SDA_MB)
IIC communication line between DP_TX and MAIN	IC7602, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)
Communication line between IF and MAIN	IC6811, IC7003	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the FAN		FAN_NG
Periphery of the cable at M31		Check if cables are firmly connected.
Periphery of the fan control regulator	IC4302	Check that the voltage outputs it.
Ambient temperature		TEMP2 A shutdown occurs because of high temperature.
Temperature sensor or its periphery	TH9401	TEMP2
Periphery of the cable between M2 and K1	CN4204, CN9401	Check if cables are firmly connected.
Startup of BCM7404	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Communication line between BCM7404 and MAIN	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Periphery of the BCM7404	IC6001	
Front-end block	IC6001, U5301	Check the BCM7404, terrestrial tuner and periphery devices.
Antenna supply voltage	IC4304	Check the IC4304 (overcurrent detection IC), its periphery devices and antenna connection line.
DTV application	IC6001	
COFDM	IC5401	Check the communication line between BCM7404 and COFDM
Tuner S2	U5201	Check the communication line between S2DEMOD and F.E.
S2DEMOD	IC5201	Check the communication line between BCM7404 and S2DEMOD
LNB	IC4503	Check the communication line between BCM7404 and LNB IC, and check the periphery parts of LNB IC.
Antenna supply voltage	IC4503	Check the LNB IC and periphery parts, and antenna connection line.
RST2 V+3_4V_ACT2, V+3_4V_D3	IC7002	Check if each voltages are started.
RST4 V+12V, V+6_5V, V+5_1V_D, V+3_4V_D	IC7002	Check if each voltages are started.
V+12V, V+6_5V, V+17V	POWER SUPPLY Unit	Check if each voltages are started.
Check the cable M1	CN4203	Check if cables are firmly connected.
IIC communication line between EEPROM and MAIN	IC7004, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)

C

D

E

F

5.5 NON-FAILURE INFORMATION

[1] INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 1 or 3 to 5 signal is not correct.	The color setting for INPUT 1 or 3 to 5 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 1 or 3 to 5 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 1 or 3 is not output. No HDMI signal is input.	The audio setting for INPUT 1 or 3 is any setting, and a video signal is not input. If the audio setting is any setting, to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output.
No sound of signals to INPUT 1 or 3 to 5 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
SCART video output	
The video output signal from the SCART connector is deteriorated. Or when the video output signal from the SCART connector is recorded, its playback picture is deteriorated.	The video signal output from the SCART connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2.	The video signal is not output from the SCART connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 1 or 3 to 5.	The video signal is not output from the SCART connector when the HDMI signal is selected.
AUDIO OUT and SCART	
The image displayed on the PDP is not synchronized with the sound from the SCART.	The audio signal from the SCART connector is synchronized with the video output signal from the SCART connector. And the audio signal from the AUDIO OUT is synchronized with the video signal that is currently displayed.
DIGITAL OUT	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The digital audio output signal from the DIGITAL connector is not synchronized with that from the SCART video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the SCART video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI [excluding PC]) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
Control via the SR connector is not possible.	Wrong connection of the cable to the PC INPUT (AUDIO) connector is suspected.
The audio signal from the PC is not output.	Wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	As the signal input to the connector that has been selected on the INPUT SELECT submenu of the Home menu is selected (this does not apply to the connectors located on the side of the unit), check the menu setting. If the output signal is not available even if the input signal is properly selected, input a signal to other input functions, check the connecting cables, or check the settings for the connected equipment. Note that if cables are connected to both the HDMI connector and composite video connector of INPUT 5, the HDMI connector will have priority over the composite video connector.
The video signal to the composite video connector is not displayed.	

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4. (The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

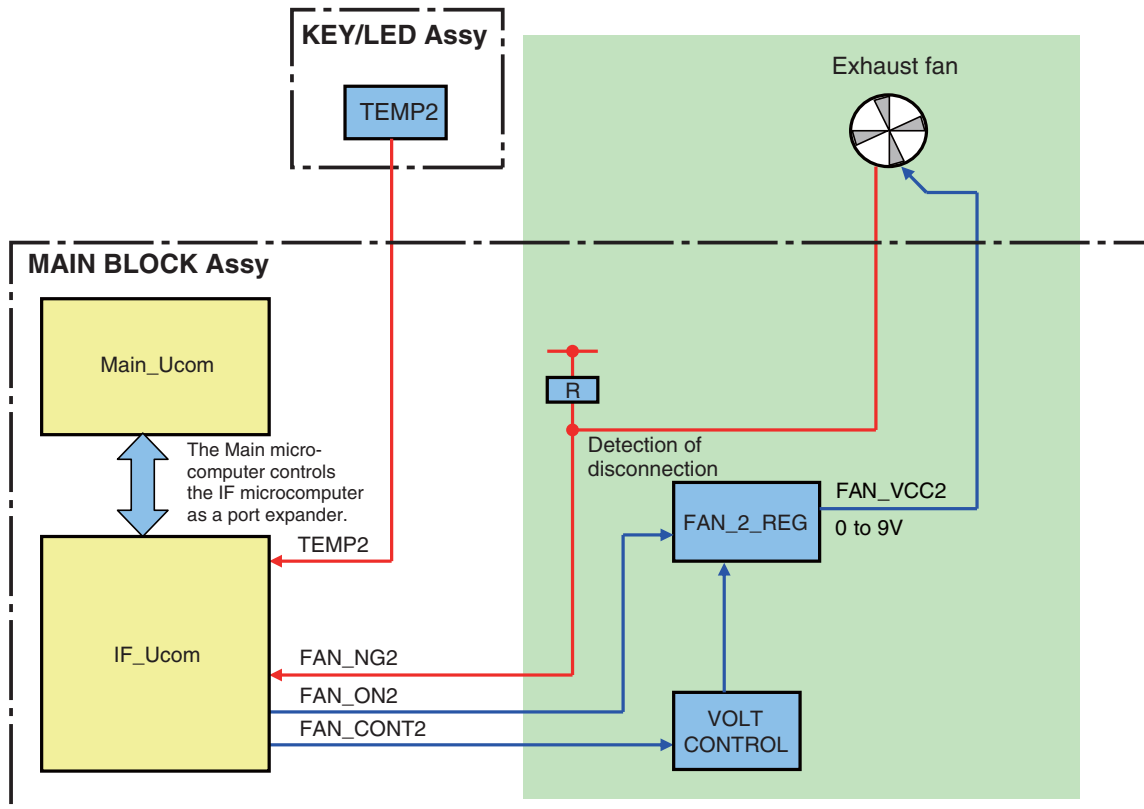
It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

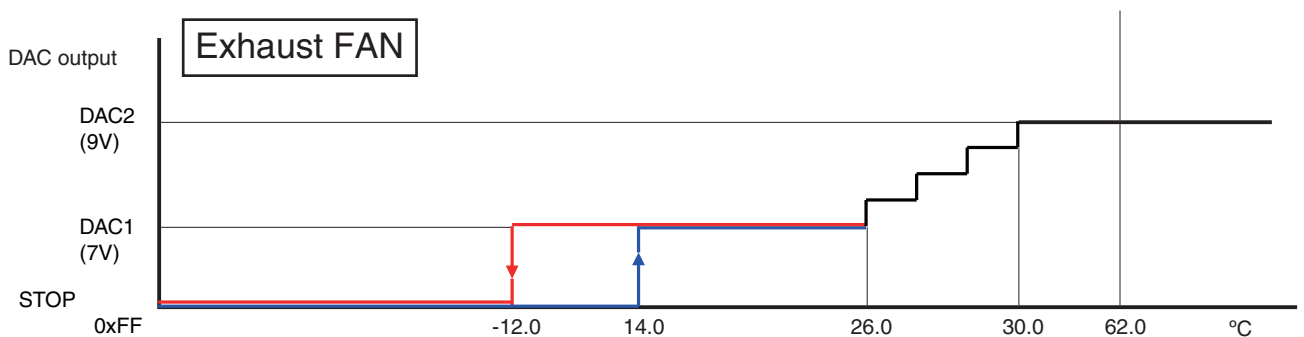
5.6 OUTLINE OF THE OPERATION

[1] SPECIFICATION OF THE FAN CONTROL

■ Block diagram



■ Operation specifications



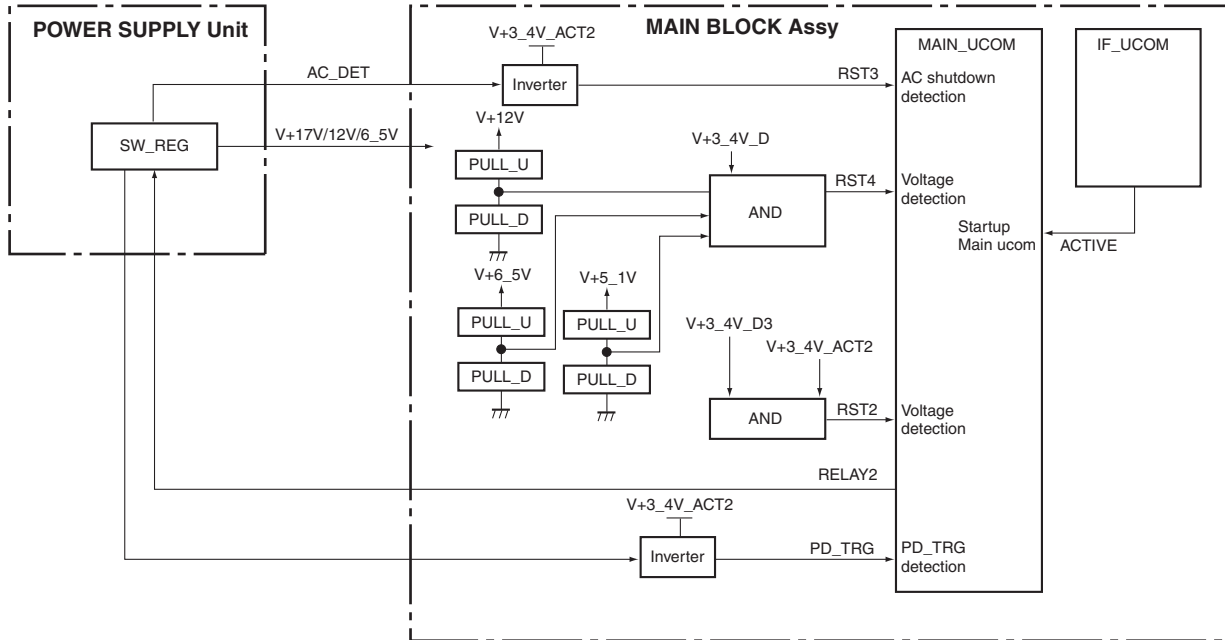
Notes:

- The operating temperature of the fan is different from the ambient temperature, because the sensor temperature is read by the microcomputer.
- The fan may not start rotating until the internal temperature of the unit reaches a certain level, such as immediately after the unit is turned on.
- When the temperature rises, the sensor voltage of TEMP2 decreases.
- When the voltage of the DAC output for exhaust FAN decreases, rotation speed of FAN rises.

[2] PROCESSING IN ABNORMALITY

Power supply and DC-DC converter

● Circuit configuration

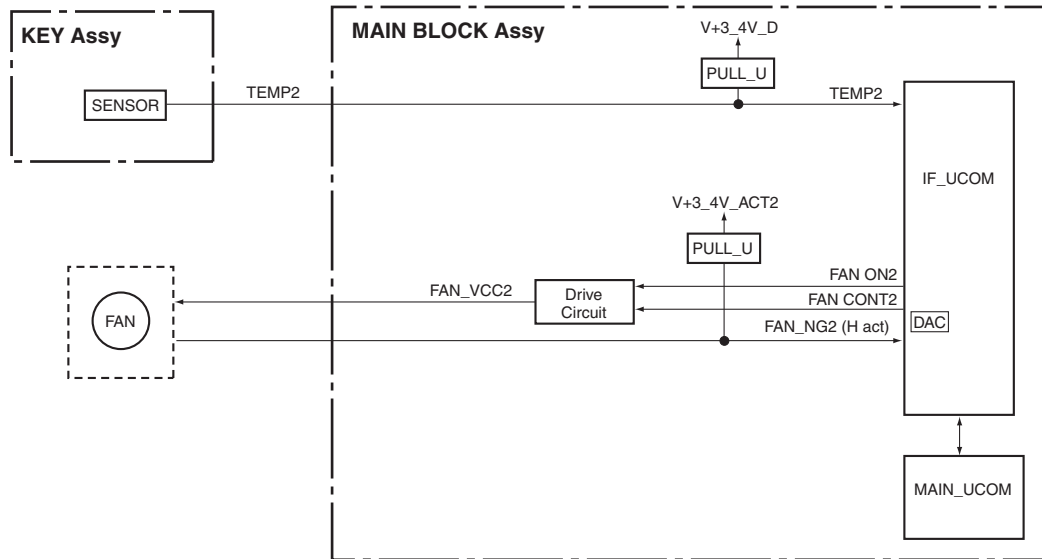


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	<ul style="list-style-type: none"> Panel screen ON (RST4 = H and PSW1 = H) While awaiting restoration of RST2 (RST2 = L) 	Shutdown occurs immediately Blue LED flashes 13 times
RST3	—	—	Excepting passive standby	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, and monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY2 is ON. or for 2 sec while the unit is ON or in Functional STB.	RELAY2 = ON (High)	Shutdown occurs immediately Blue LED flashes 13 times
PD_TRG	VCC power (MR-PWR)	Shutdown occurs when the signal is continuously "L" for 30msec * 3 times after RELAY2 is ON.	<ul style="list-style-type: none"> RELAY2 = ON Monitor it after 3 sec. 	Power-down occurs immediately Red LED flashes once

Fan and temperature sensor

● Circuit configuration

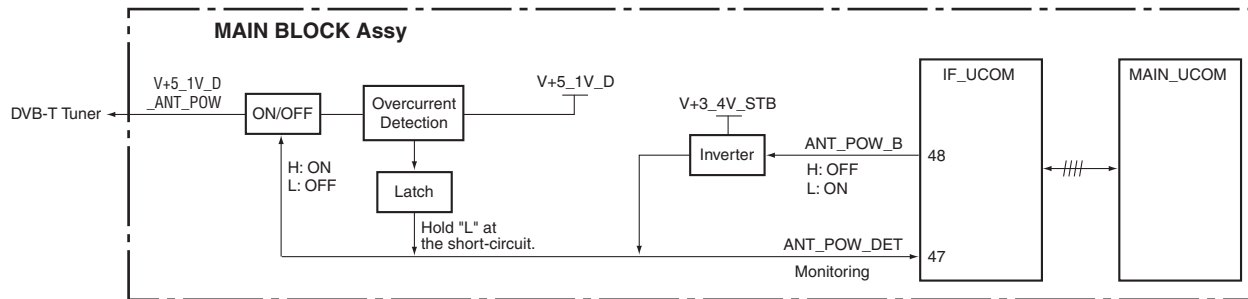


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
FAN_NG2	FAN	Shutdown occurs when the signal is "H." 1 S * 3 times	RST4 = H and FAN_ON2 = H (Monitoring starts 3 sec after the above conditions are established.)	Shutdown occurs immediately Blue LED flashes 10 times
TEMP2	High temperature at MR	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times	RST4 = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. In the Functional STB: Shutdown occurs immediately Blue LED flashes 11 times

Power supply for DVB-T Antenna for Europe

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
ANT_POW_DET	DTB antenna short-circuited	Warning message is displayed when the signal is L (100 mS, 3 times)	RST4 = H and ANT_POW_B = L (Monitoring starts 1 sec after the above conditions are established.)	Output of a warning message for 60 sec.

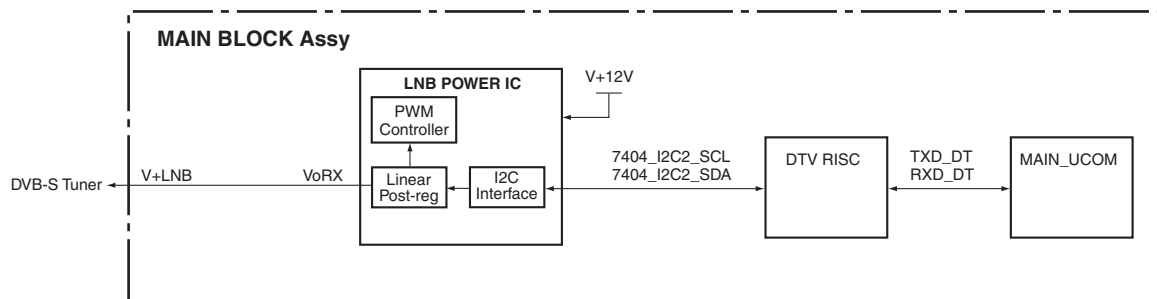
● Conditions of circuit reset

The circuit can be reset by unplugging then plugging the power cord back in (it will not be reset by Standby ON/OFF).

Power supply for DVB-S Antenna for Europe

● Circuit configuration

Note: Specifications for the output of warning-message indication will be added in the future.



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
—	S2 antenna short-circuited	Notification from DTV (at 7404_I2C2, OR of OLF bit and OTF bit of the LNB IC System Register is 1)	RST4: "H" and during reception of satellite broadcast	Output of a warning message for 60 sec. Only while a satellite broadcast program is displayed on the main screen.

● Conditions of circuit reset

The circuit will be automatically reset after an error, such as short-circuiting of the antenna, is resolved and the unit is restored.

[3] HOW TO OPERATE THE MEDIA RECEIVER SEPARATELY

● Necessary items for operation

- Media Receiver
- DP-to-HDMI conversion jig: GGF1627 (with the AC adaptor)
AC adaptor INPUT: 100 V to 240 V, 50/60 Hz, 0.3 A
OUTPUT: DC 6 V, 1.8 A $\ominus \text{---} \bullet \text{---} \oplus$
- Monitor or TV (with which an image with resolution of 1920 × 1080 p, 60 Hz can be displayed, with HDMI input)
Note: When checking with DVI monitor, setting change of this jig is required.
- DP cable (GGP1117) and HDMI cable
- G8 or G9 remote control unit (in case of controlling by remote control unit)
- PC and RS-232C straight cable (in case of controlling by PC)
- HDMI -DVI cable (in case of connecting with DVI monitor)

● Connection

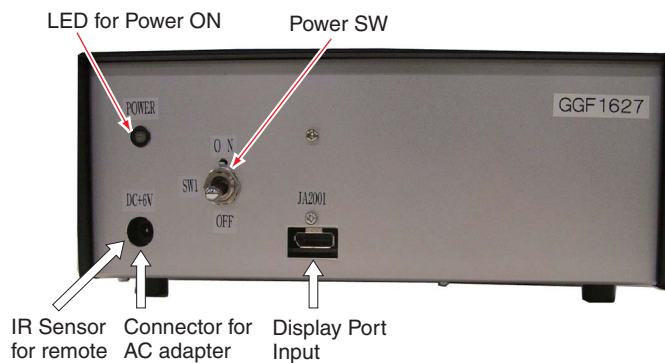


Fig.1 DP - HDMI Conversion tool (Front side)

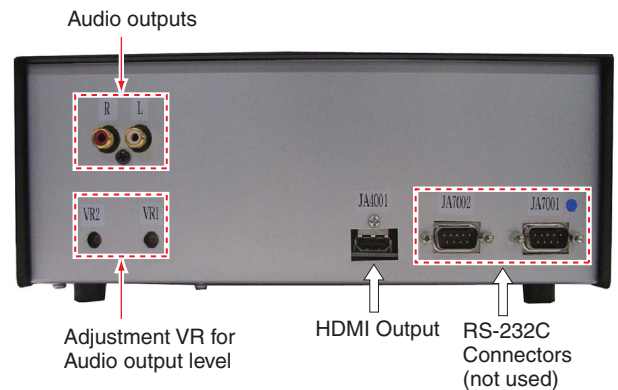


Fig.2 DP - HDMI Conversion tool (Rear side)

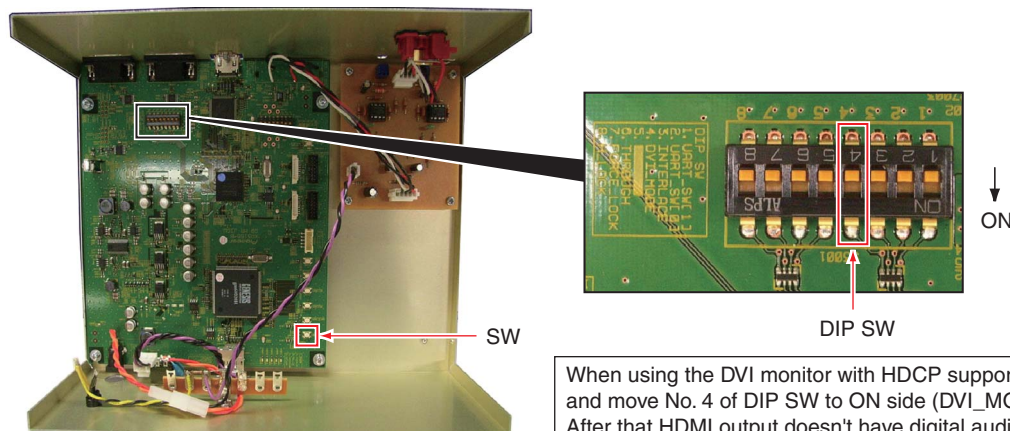


Fig.3 DP - HDMI Conversion tool
DIP SW Setting (output mode setting for HDMI connector)

A

● Preparation

- Set the MR from System Operation mode to Standalone Operation mode.
The MR is normally set to System Operation mode. If the MR is turned on in this mode, an error warning is issued (the red and blue LEDs alternately flash), and it cannot be operated properly.

To change to Standalone Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on. (The red and blue LEDs alternately flash to warn of an error.)
2. In this state, send the MRMS01 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL - key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

C

● Operation

After the setting in Preparation is completed, turn the units on in the following order then perform analysis:

1. Turn the monitor or TV on. (Set the input mode to HDMI.)
2. Turn the DP-to-HDMI conversion jig on.
3. Turn the MR on.

If no image is displayed on the monitor or TV after the MR is turned on, press and hold the switch on the DP-to-HDMI conversion jig for about 1 sec.

● How to control the MR

- With the remote control unit:

The infrared receiver (IR) sensor for remote control unit is placed inside of the jig. Please point the remote towards the AC adaptor connector on the jig.

Unlike normal products, sensor reception of this tool is not so sensitive due to reduce interference with another Pioneer Plasma TV.

Please keep the distance between the remote control unit and the sensor less than 15cm.

- With RS-232C commands:

Connect a PC to the MR via their RS-232C ports and send RS-232C commands from the PC. (Baud rate: 9600 bps)

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● After analysis is finished

After analysis in Standalone Operation mode is finished, before returning the MR to the customer, be sure to return the unit to System Operation mode, as shown in the procedures below.

If it remains in Standalone Operation mode, when it is connected with the customer's monitor, the monitor will detect a connection error and not operate properly, and no image will be displayed.

To set the MR to System Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on.
2. Send the MRMS00 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in System Operation mode.

4. Connect the MR directly with the monitor and check that they operate properly.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL + key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

● Products whose proper operation has been proved when HDMI connection is performed with this MR

Model Number	Manufacturer	Built-in Audio AMP
PDP-5000EX	Pioneer	○ (SP is required)
G8	Pioneer	○ (SP is required except 42 inch)
FP241WJ	BenQ	× (External audio amp and SP is required)
3008WFP	DELL	× (External audio amp and SP is required)
HD2441W	EIZO NANAO	× (External audio amp and SP is required)

● Attention point for audio volume

Audio output level is connected with MR volume level. If VR level of a MR is normal (around 10 - 15) and displayed HDMI TV or audio AMP is not so high level, sound level is very low. Please turn up the volume to appropriate level either or both units.

In case of turning up volume of MR to very high level during testing, turn down it to normal level and then turn off the unit. Otherwise when connecting the MR with panel, very loud sound is output from speakers and it might be a danger.

● Attention point when using another Pioneer Plasma TV

Please pay attention to interference of IR signal when using Pioneer plasma TV as HDMI monitor.

If remote signal is also received to Pioneer plasma TV when operating MR with this tool and remote, you might confuse of which unit is controlled by the remote.

The following methods are some of suggestions to control only MR with the conversion tool.

Using the remote control unit and the conversion tool (AC adaptor connector) as nearly as possible hiding remote sensor of the plasma TV temporally.

● Setting Method to connect with DVI monitor with HDCP support (DVI mode)

1. Open bonnet with power off condition.
2. Refer to Fig. 3, move the DIP SW No. [4] to ON side.
After this setting, DVI mode signal is output from HDMI output connector of HDMI.

Note: 1. Some of DVI monitors might not display output signal from this conversion tool.
2. Output signal does not contain digital audio signal.

5.7 OUTLINE OF RS-232C COMMAND

A

[1] PREPARED TOOLS

- It is necessary to prepare the following one to use 232C command.
- PC
 - Application for control
 - 232C cable (straight)
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

B

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[2] USING RS-232C COMMANDS

Individual ports are provided for RS-232C and SR+ connectors with this model. Therefore, unlike the case of previous models, which required switching of exclusive operation between these connectors on the Integrator menu, switching is no longer required.

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5.8 LIST OF RS-232C COMMANDS

RS-232C command list

Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
A					
AMT	S00	Audio mute OFF			
	S01	Audio mute ON			
C					
CHN	FWD	Changing tuner preset channel (1 step forward)			
	REV	Changing tuner preset channel (1 step reverse)			
CHM		Clearing data of the hour meter		●	Last memory is performed to the panel side.
CHR		Clearing data of the hour meter of MTB/MR side			Clear the hour meter of screen display of MAIN NG.
CNG		Clearing data of the SD history of MTB/MR side			
D					
DPT		Rewriting the Display Port Tx			
DW*		To subtract * to the adjustment value (* = 0 to 9, subtract 10 with DW0 and set to minimum value with DWF)			
F					
FAN		Factory mode: OFF		●	
FAY		Factory mode: ON			
FST	S35	Set each memory setting of MTB/MR side to the shipment state.		●	
I					
INA	***	Switching the terrestrial analog signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial analog signal (Channnel is in the last.)	MAIN		
INC	***	Switching the terrestrial digital signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial digital signal (Channnel is in the last.)	MAIN		
IND	***	Switching the satellite digital signal, direct tuning (***: channel number)	MAIN		
		Switching the satellite digital signal (Channnel is in the last.)	MAIN		
INH		Switching the Home Media Gallery / Home Gallery			
INP	S01	Input: INPUT1	MAIN		
	S02	Input: INPUT2	MAIN		
	S03	Input: INPUT3	MAIN		
	S04	Input: INPUT4	MAIN		
	S05	Input: INPUT5	MAIN		
	S06	Input: INPUT6 (PC)	MAIN		
M					
MRM	S00	Setting the mode to normal operation	MAIN	●	
	S01	Setting the mode to standalone operation	MAIN	●	
MST	S00	Display one screen			
	S01	PsideP (Main size: normal)			
	S02	PinP (Right down)			
	S03	PinP (Right up)			
	S04	PinP (Left down)			
	S05	PinP (Left up)			
	S08	SWAP (Exchanging sub-screen)			
O					
OSD	S00	OSD setting: OFF	MAIN		
	S01	OSD setting: ON	MAIN		
P					
POF		Power: OFF	MAIN		
PON		Power: ON	MAIN		
PUC	S00	PURE CINEMA: OFF	MAIN	●	
	S01	PURE CINEMA: Standard	MAIN	●	
	S02	PURE CINEMA: Advance	MAIN	●	
	S03	PURE CINEMA: Smooth	MAIN	●	
Q					
QMT		Acquiring temperature of MTB/MR side and Fan speed			
QNG		Acquiring shutdown information of MTB/MR side			
QS1		Acquiring unit data, such as the software version			
QSE		Acquiring unit data, such as the software version of MTB/MR side (specific destination)			

A

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Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
S					
SDF	S00	SRS DEFINITION: OFF			
	S01	SRS DEFINITION: DEFINITION1			
	S02	SRS DEFINITION: DEFINITION2			
	S03	SRS DEFINITION: DEFINITION3			
SML	***	Adjustment of the side mask level	MAIN	●	
SRS	S00	SRS: OFF			
	S01	SRS: SRS1			
	S02	SRS: SRS2			
	S03	SRS: SRS3			
SZM	S00	Setting the screen size to Dot by Dot	MAIN		
	S01	Setting the screen size to 4 :3	MAIN		
	S02	Setting the screen size to FULL or FULL 1080i	MAIN		
	S03	Setting the screen size to ZOOM	MAIN		
	S04	Setting the screen size to CINEMA	MAIN		
	S05	Setting the screen size to WIDE or WIDE1	MAIN		
	S06	Setting the screen size to FULL 14:9	MAIN		
	S07	Setting the screen size to CINEMA 14:9	MAIN		
	S11	Setting the screen size to AUTO	MAIN		
	S12	Setting the screen size to WIDE2	MAIN		
T					
TBS	S00	TRUBASS: OFF			
	S01	TRUBASS: TRUBASS1			
	S02	TRUBASS: TRUBASS2			
	S03	TRUBASS: TRUBASS3			
U					
UP*		To add * to the adjustment value (* = 0 to 9, add 10 with UP0 and set to maximum value with UPF)			
V					
VOL	UP*, DW*, ***	To adjust the volume			Use this command by designating the adjustment value *** (=000 to 060).
Z					
ZME	***	Initializing the video EEPROM data of the MTB/MR side		●	

5.9 DETAILS OF RS-232C COMMANDS

[1] QS1 (Software Version Information of the Microcomputer)

Model information and version information are returned.

Command Format	Effective Operation Modes	Function	Remarks
[QS1]	Every Time	Output of status	Return data: 3 (ECO) + 112 (DATA) + 2 (CS) = 117 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QS1
1	Resolution/Size	1 byte	F
2	Panel Generation	1 byte	9
3	Destination	1 byte	*
4	Grade	1 byte	*
5	Product Form	1 byte	A
6	Boot version of Module microcomputer	3 byte	-01A
7	Program version of Module microcomputer	8 byte	-01A ' ' ' '
8	Boot version of sequence processor	3 byte	-01Z
9	Program version of sequence processor	8 byte	-01Z ' ' ' '
10	Panel information	8 byte	G9_50F_2
11	Derivative operation identification	1 byte	*
12	Reserved (panel section)	7 byte	*****
13	, (comma)	1 byte	,
14	MTB generation	1 byte	9
15	MTB destination	1 byte	A
16	MTB grade	1 byte	H
17	MTB product form	1 byte	B
18	Program version of IF microcomputer	8 byte	-01A
19	Boot version of IF microcomputer	4 byte	01A
20	Program version of Main microcomputer	8 byte	-01A
21	Boot version of Main microcomputer	4 byte	01A
22	Common version of ASIC	8 byte	-01A
23	Boot version of ASIC	8 byte	01A
24	PRS version of ASIC	8 byte	-01A
25	PIC version of ASIC	8 byte	-01A
26	Common version of the Digital Tuner	8 byte	-0A
27	Boot version of the Digital Tuner	4 byte	01A
CS	2 Byte	2 byte	4A

11: Derivative Operation Identification	
*	Standard model operation
1	Derivative model operation

14: MTB Generation	
9	G9

15: MTB Destination	
A	North America
C	China
E	Europe
G	General
J	Japan
U	Australia

16: MTB Grade	
H	Elite/One body Europe HD /System Europe HD/One body Australia
T	Regular/One body Europe SD
D	Derivative Model
*	No Grade (Japan/General/China)

17: MTB Product Form	
B	One body model
S	System model

1: Resolution/Size	
F	50-FHD (1920*1080)
G	60-FHD (1920*1080)

2: Panel Generation	
9	G9

3: Destination	
*	Commonness

4: Grade	
*	Commonness
Z	Evaluation

5: Not used	
A	"A" fixed

10: Panel Information (8 Byte)		
1 to 2nd byte	G9	Generation information
4 to 5th byte	50	50 inch
	60	60 inch
6th byte	F	FHD
8th byte	3	50 inch 2nd PLANT (Reserved)
	2	50 inch 2nd PLANT
	1	50 inch 1st PLANT
	'	Others

' = space

[2] QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	Return data: 3 (ECO) + 32 (DATA) + 2 (CS) = 37 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSE
1	Check flag for production	1 byte	E
2	Reserved	3 byte	***
3	DTB hardware version	4 byte	0342
4	User setting password	4 byte	1234
5	DP Tx firmware version	16 byte	123456789ABCDEFGH
6	DP Tx hardware version	4 byte	ABCD
CS	Check Sum	2 byte	13

[3] QMT (STATUS INFORMATION OF MTB/MR SECTION)

Temperature information on the MTB/MR section is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QMT]	Every time	Output of status	Return data: 3 (ECO) + 8 (DATA) = 11 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QMT
1	A/D value of temperature of MTB/MR section	3 byte	276
2	Reserved (*1)	1 byte	1
3	Reserved	4 byte	****

*1 Although the numerics 0, 1, and 2 can be input, those input values are invalid.

[4] QNG (SHUTDOWN INFORMATION OF MTB SECTION)

The command QNG is for acquiring the data from the 8 latest shutdown (SD) logs of the MTB section.

Command Format	Effective Operation Modes	Function	Remarks
[QNG]	Every time	To acquire data on the shutdown (NG) logs of MTB side	Return data: 3 (ECO) + 96 (DATA) + 2 (CS) = 101 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QNG
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the MTB hour meter for the latest SD	7 byte	0752013
4	Reserved	3 byte	000 fixed
5	Second latest SD data	1 byte	5
6	Second latest SD subcategory data	1 byte	1
7	Data from the MTB hour meter for the second latest SD	7 byte	0495204
8	Reserved	3 byte	000 fixed
9	Third latest SD data	1 byte	A
10	Third latest SD subcategory data	1 byte	2
11	Data from the MTB hour meter for the third latest SD	7 byte	0365814
12	Reserved	3 byte	000 fixed
13	Fourth latest SD data	1 byte	5
14	Fourth latest SD subcategory data	1 byte	0
15	Data from the MTB hour meter for the fourth latest SD	7 byte	0256612
16	Reserved	3 byte	000 fixed
17	Fifth latest SD data	1 byte	7
18	Fifth latest SD subcategory data	1 byte	2
19	Data from the MTB hour meter for the fifth latest SD	7 byte	0105628
20	Reserved	3 byte	000 fixed
21	Sixth latest SD data	1 byte	B
22	Sixth latest SD subcategory data	1 byte	0
23	Data from the MTB hour meter for the sixth latest SD	7 byte	0003009
24	Reserved	3 byte	000 fixed
25	Seventh latest SD data	1 byte	C
26	Seventh latest SD subcategory data	1 byte	1
27	Data from the MTB hour meter for the seventh latest SD	7 byte	00002A9
28	Reserved	3 byte	000 fixed
29	Eighth latest SD data	1 byte	C
30	Eighth latest SD subcategory data	1 byte	4
31	Data from the MTB hour meter for the eighth latest SD	7 byte	0000012
32	Reserved	3 byte	000 fixed
CS	2 Byte	2 Byte	7D

A

< SD Information No. >

Frequency *	Shutdown Factor	Remarks (Operation)
1	Failure of Power Supply of VCC	Immediately Shutdown
5	Abnormality in MSP	Go to No. 5 Subcategory Information
6	Failure of communication with Module microcomputer	Immediately Shutdown
7	Failure in 3-wire serial communication of Main microcomputer	Go to No. 7 Subcategory Information
8	Failure in IIC communication of Main microcomputer	Go to No. 8 Subcategory Information
9	Failure in Communication of Main microcomputer	Immediately Shutdown
10(A)	Abnormality in FAN	Go to No. 10 Subcategory Information
11(B)	Abnormality in high temperature	Immediately Shutdown
12(C)	Failure in Digital Tuner	Go to No. 12 Subcategory Information
13(D)	Failure in Power Supply at MTB section	Go to No. 13 Subcategory Information
15(F)	Failure in Main EEPROM	Immediately Shutdown

B

*: Indicates the frequency of Blue LED flashing when the shutdown is occurred.

< No. 5 Subcategory Information on "Shutdown signal from D-Amp./short-circuit of speaker terminal" >

Value	Shutdown Factor	Remarks (Operation)
3	MSPMAP	Immediately Shutdown

C

< No. 7 Subcategory Information on "Failure in 3-wire serial communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Communication error of IF microcomputer	Immediately Shutdown
2	Communication error of ARIA	Immediately Shutdown

D

< No. 8 Subcategory Information on "Failure in IIC communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Tuner 1	Immediately Shutdown
2	MSP/MAP	Immediately Shutdown
3	AV-Switch	Immediately Shutdown
4	RGB-Switch	Immediately Shutdown
5	Main VDEC	Immediately Shutdown
6	VDEC-SDRAM	Immediately Shutdown
7	AD/PLL	Immediately Shutdown
8	HDMI	Immediately Shutdown
9	DisplayPortTx	Immediately Shutdown
B	US-MAP	Immediately Shutdown
C	GCR	Immediately Shutdown
D	COFDM	Immediately Shutdown

E

< No. 10 Subcategory Information on "Abnormally in FAN" >

Value	Shutdown Factor	Remarks (Operation)
1	FAN 1	Immediately Shutdown
2	FAN 2	Immediately Shutdown

< No. 12 Subcategory Information on "Failure in Digital Tuner" >

Value	Shutdown Factor	Remarks (Operation)
1	Starting error of the digital tuner	Communication stop
2	Communication error with the digital tuner	
3	DTB device error	
4	Abnormally in BCM7038	
5	Fugue	
6	Audio Chip	
7	Tuner 1/Tuner 1 or 2	
8	Card I/F IC	
9	VBI Slicer	
B	Flash	
C	EEPROM	
D	EEPROM	
F	DTV Antenna	
G	Home Gallery	
I	Application	
J	DEMODO(US)/COFDM(EU)	
K	Tuner 2	
L	S2DEMODO	
M	LNB	
O	DTB ERROR	
P	Abnormally in DTB (S2) antenna	

< No. 13 Subcategory Information on "Failure in Power supply at MTB section" >

Value	Shutdown Factor	Remarks (Operation)
1	RST 2	Immediately Shutdown
2	RST 4	Immediately Shutdown

F

[5] FAY/FAN (ADJUSTMENT COMMANDS PERMISSION/PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section "6.1 [3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE".
[FAN]	During FAY	Adjustment command is invalid.	

6. SERVICE FACTORY MODE

6.1 DETAILS OF THE SERVICE FACTORY MENU

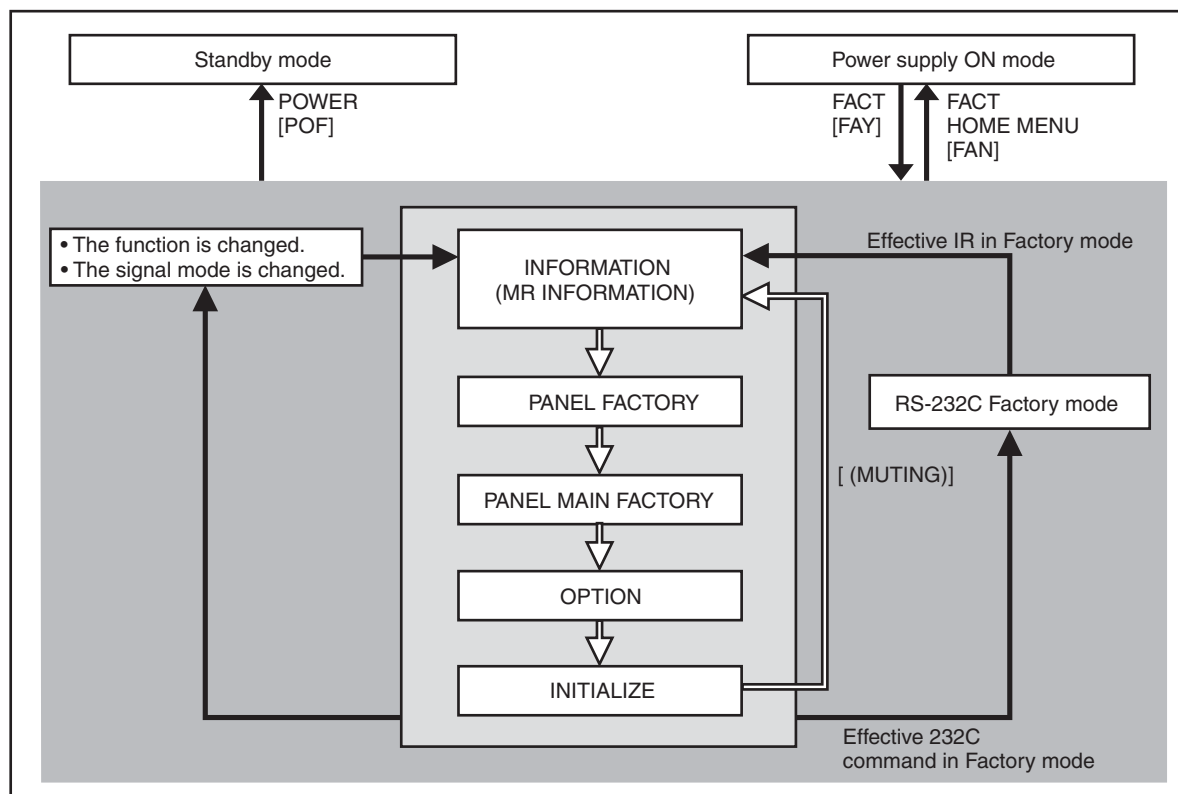
Operations during Service Factory mode are described here.

Before entering Factory mode of the PDP, make sure that the "HD AV Converter" setting on the PDP menu is set to "Disable." If it is set to "Enable," change it to "Disable" then enter Factory mode.

To confirm the "HD AV Converter" setting on the PDP menu, proceed as follows:
Select HOME MENU, Option, then HD AV Converter in HDMI Control Setting.

Note: If "HD AV Converter" is set to "Enable," the video/audio signals will not be displayed/output even if external equipment is connected via input connectors other than INPUT 4 of the PDP.

[1] SERVICE FACTORY MODE TRANSITION CHART



[2] HOW TO ENTER/EXIT SERVICE FACTORY MODE

How to enter Service Factory Mode

By using a PDP service remote control)

- PDP service remote control : Press [FACTORY] key.

By issuing RS-232C commands)

- During normal Standby mode : Issue [PON] then [FAY].
- During normal operation mode : Issue [FAY].

How to exit Service Factory Mode

By using a PDP service remote control)

- PDP service remote control : press [FACTORY] key.
- Supplied remote control unit : press [HOME MENU] key.

By issuing RS-232C commands)

- Issue [FAN].

How to enter Service Factory Mode by Using the supplied Remote Control Unit

- From this model, can not enter the Service Factory Mode by operating the supplied remote control unit keys.

[3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

■ Functions whose setting are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the "FAY" command is received) :

Function	Remarks
2-Screen Operation	Input function set on the main side is selected.
FREEZE	
Auto size, Side Mask	It is not performed during Factory mode.
ORBITER, Mask control	Central value operation (ORBITER)
Sleep Timer	Cancel the operation.
Room light sensor	Turn off the detecting operation (Setting data will be retained.)
Blue LED dimmer	Turn off the operation (Setting data will be retained.)
Setting of Parental Control	When this is turned off, the block of the screen is released.
Power Control	Turn off the operation (However, the setting maintains it.)
Image Position	Central value operation

Note: Enter the factory after cancelling ACI because the ACI operation setting OFF and not done.

■ User data

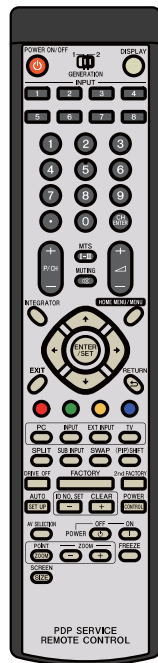
User data will be treated as follows :

- User data on picture-quality and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- User-setting data will be applied to the various settings (items on the menus), signal formats, and the items that are associated with path change (HDMI settings, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size). Are reset to the default values (data stored in memory will be retained).
Screen size will be retained.

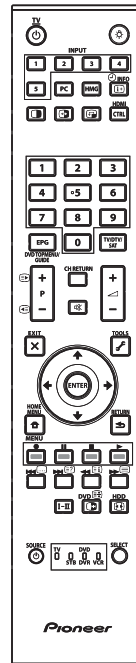
[4] REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
↓ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
← (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 5)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Factory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



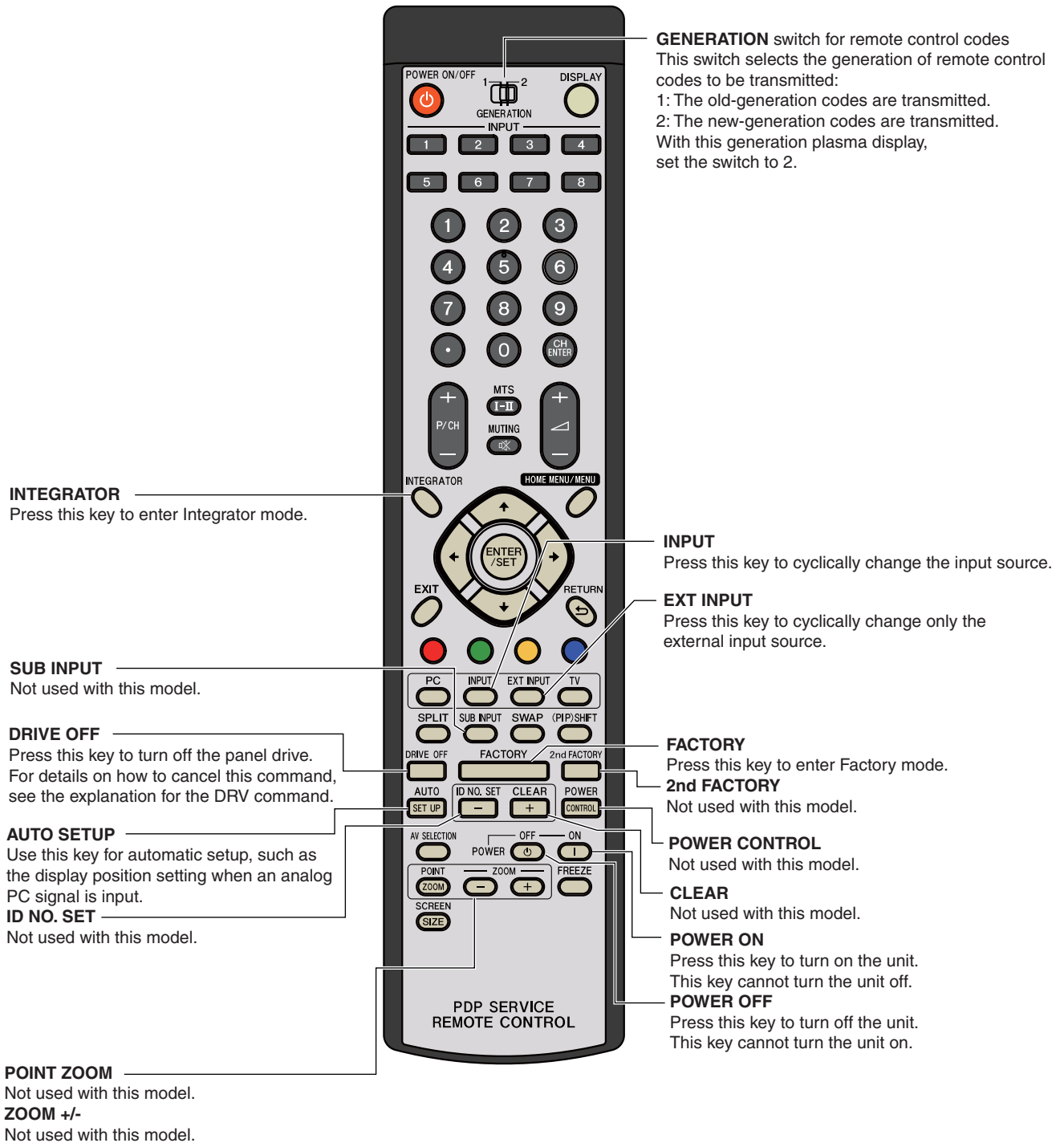
PDP service
remote control



Supplied
remote control

[5] PDP SERVICE REMOTE CONTROL

- The keys labeled with the same names on the service remote control unit have the same functions as those of the supplied remote control unit. (See "2.3 PANEL FACILITIES.")
- For the keys not provided on the supplied remote control unit, see the explanations below:



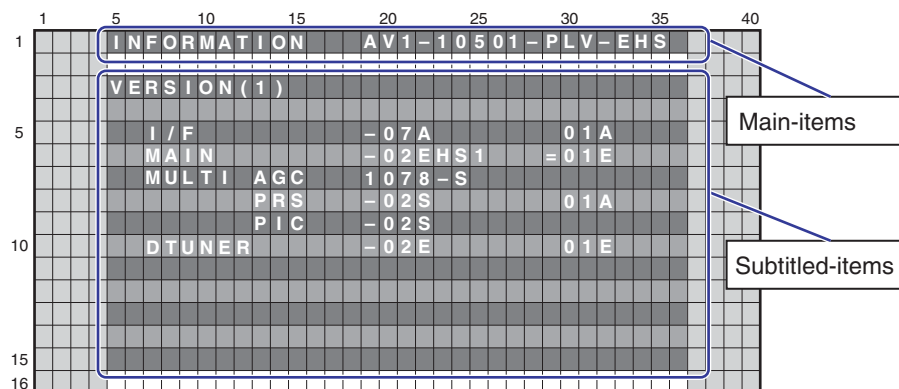
[6] FACTORY HIERARCHICAL TABLE

Large Item			Variable / Adjustment Range	Remarks
	Middle Item	Small Item		
6.2 [1] INFORMATION				
	[1-1] VERSION (1)			
	[1-2] VERSION (2)			
	[1-3] VERSION (3)			
	[1-4] MAIN NG	CLEAR <=>	NO <=> YES	
	[1-5] TEMPERATURE			
	[1-6] HOUR METER	CLEAR <=>	NO <=> YES	
	[1-7] HDMI SIGNAL INFO 1			
	[1-8] HDMI SIGNAL INFO 2			
	[1-9] VDEC SIGNAL INFO 1			
	[1-10] VDEC SIGNAL INFO 2			
6.2 [2] PANEL FACTORY (+) (*2)				
	[2-1] PANEL INFORMATION			
	[2-2] PANEL WORKS			
	[2-3] POWER DOWN			
	[2-4] SHUT DOWN			
	[2-5] PANEL-1 ADJ (+)			
	[2-6] PANEL-2 ADJ (+)			
	[2-7] PANEL FUNCTION (+)			
	[2-8] ETC (+)			
	[2-9] RASTER MASK SETUP (+)			
	[2-10] PATTERN MASK SETUP (+)			
	[2-11] COMBI MASK SETUP (+)			
6.2 [3] PANEL MAIN FACTORY (+) (*2)				
	[3-1] PM NG INFO			
	[3-2] PM STATE INFO			
	[3-3] DP_RX INFO			
	[3-4] PM_SETUP (+)			
6.2 [4] OPTION				
	[4-1] CH PRESET <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-2] Digital AFT <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-3] SYNC DET (+)			for the technical analysis
	[4-4] CTI (+)			for the technical analysis
6.2 [5] INITIALIZE				
	[5-1] SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>		
	[5-2] FINAL SETUP	DATA RESET <=>	NO <=> YES	
	[5-3] DTB SERVICE MODE	MODE SHIFT <=>	NO <=> YES	for the technical analysis (*1)
	[5-4] Wide XGA AUTO <=>		DISABLE <=> ENABLE	for the technical analysis
	[5-5] AUTO ADJUST. <=>	AUTO ADJUST. <=>	NO <=> YES	

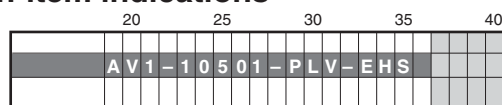
(*1): Exit the Service Factory Menu and enter the Digital Tuner Service menu.

(*2): For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[7] INDICATIONS IN SERVICE FACTORY MODE



Main-item indications



① Input function

Input Functions	OSD
AV 1 to 5	AV 1 to 5
Terrestrial Wave (Analog)	AIR
Terrestrial Wave (Digital)	ARD
Satellite digital broadcasting	SAT
Cable (Digital)	CBD
Home Media Gallery	HMG
PC	PC

② SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

③ Color system and Signal type

Color System and Signal Type	OSD	
	At Composite Input	At S-connector Input
NTSC	NTV	NTS
PAL	PLV	PLS
PAL M	PMV	PMS
PAL N	PNV	PNS
PAL 60	P6V	P6S
SECAM	SCV	SCS
4.43 NTSC	4NV	4NS
BLACK/WHITE	BWV	BWS
Y/CB/CR	CBR	
Y/PB/PR	PBR	
RGB	RGB	
Digital Video signal	DIG	

④ Option (Destination, Panel Generation, etc.)

Options	OSD
KRP-500P/WYSIXK5	EHS
KRP-600P/WYSIXK5	

A

② SIG Mode and Screen size (by User is displayed)

1st and 2nd characters : Resolution of the input signal

3rd and 4th characters : Refresh rate of the input signal

5th character : Selection of the screen size

B

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.750
	60	SDTV*525i	60.000	15.750
20	50	SDTV*625p	50.000	31.500
	60	SDTV*525p	60.000	31.500
30	50	HDTV*1125i	50.000	33.750
	60	HDTV*1125i	60.000	33.750
40	50	HDTV*750p	50.000	45.000
	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
	50	HDTV*1125p	50.000	56.250
	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

C

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

D

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	●	—	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	
9	WIDE1	●	—	
A	WIDE2	●	—	

●: supported, —: unsupported

F

6.2 DETAILS OF THE FACTORY MENU

[1] INFORMATION

■ Operation items

No.	Function	Content	RS-232C Command
[1-1]	VERSION (1)	The Flash memory versions for each device are displayed.	QS1
[1-2]	VERSION (2)	The Flash memory versions for each device are displayed.	QSE
[1-3]	VERSION (3)	The Flash memory versions for each device are displayed.	QSB
[1-4]	MAIN NG	The Shutdown NG information and Event Times in the MTB section are displayed.	QNG
[1-5]	TEMPERATURE	The present temperature and the FAN rotating status are displayed.	—
[1-6]	HOURLY METER	The accumulation power ON count of the panel is displayed.	—
[1-7]	HDMI SIGNAL INFO 1	The status registers of HDMI receiver are displayed with hexadecimal.	—
[1-8]	HDMI SIGNAL INFO 2		
[1-9]	VDEC SIGNAL INFO 1	Display the signal information input to VDEC.	—
[1-10]	VDEC SIGNAL INFO 2		

[1-1] VERSION (1)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
I/F	I/F microcomputer	-07A	01A
MAIN	Main microcomputer	-02EHS1	=01E
MULTI AGC	AGC data of Multi processor	1078-S	
MULTI PRS	Program of Multi processor	-02S	01A
MULTI PIC	Picture quality data of Multi processor	-02S	
DTUNER	Software program of the Digital tuner	-02E	01E

[1-2] VERSION (2)

1	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Display Item	Meaning	Display Example
DTB HARD	DTB Hardware Version	0342
PASSWORD	User setting password	1234
DP TX	DP TX Firmware Version	123456789ABCDEFG
DP TX HARD	DP TX Hardware Version	2C13

[1-3] VERSION (3)

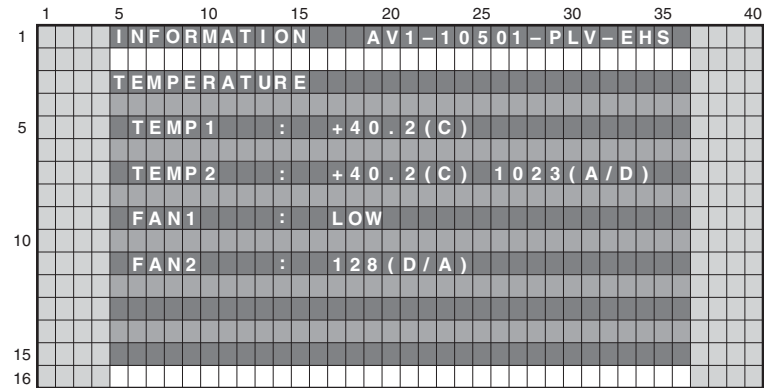
1	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
P_MAIN	Panel Main microcomputer	-02AS	01A
MODULE	Module microcomputer	-06A	01A
SEQ PRS	Program of the sequence processor	-03Y	01A
Display Item	Meaning	Display Example	
DP RX	DP RX Firmware Version	123456789ABCDEFG	
DP RX HARD	DP RX Hardware Version	2C12	
Display Item	Meaning		
PANEL INFO	It displays the generation of the panel, inchage and the type of the panel.		

[1-5] TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



Display Item	Meaning
TEMP1	The temperature of the sensor on the panel side is displayed by the Centigrade (C).
TEMP2	The temperature conversion display is done with 10 bit the A/D input value of IF microcomputer. It is displayed by both the Centigrade (C) and 8 bit A/D value. Note: When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.
FAN1	Although STOP, LOW, or HIGH may be displayed, they are meaningless. Ignore those displays.
FAN2	The value of the rotation state of FAN is displayed. During a rotation of FAN, 8bit D/A value output from IF microcomputer is displayed. It is displayed with OFF during a stop.

[1-6] HOUR METER

	1	5	10	15	20	25	30	35	40			
1			INFORMATION					AV1-10501-PLV-EHS				
		HOUR METER										
5		PANEL				00151H 21M						
		PANEL COUNT/SERIAL										
10		P-COUNT				00000095 TIMES						
		SERIAL				ABCDEFGHIJKLMNO						
15												
16												

Display Item	Meaning	Display Example
PANEL	HOUR METER of the panel	00151H 21M
P-COUNT	Accumulation power ON count of the panel	00000095 TIMES
SERIAL	Serial number of the Display (panel)	ABCDEFGHIJKLMNO

• MTB HOUR METER

In HOUR METER screen on Factory Menu, press the [ENTER/SET] key, and then it moves to the screen to clear MTB HOUR METER. (MTB HOUR METER is cleared only.)

	1		5		10		15		20		25		30		35		40
1																	
5																	
10																	
15																	
16																	

Operation:

- Even if [←] key or [→] key is pressed, {CLEAR <=> :YES} ↔ {CLEAR <=> :NO} is repeated.
- Selecting <NO> then pressing the ENTER/SET key will return the screen to the next higher layer, without doing anything.
- Selecting <YES> then holding the ENTER/SET key pressed for 5 seconds will clear the HOUR METER (HOUR METER while the MAIN NG screen is displayed) data that are managed in MTB then return the screen to the next higher layer.

[1-7] HDMI SIGNAL INFO 1

	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Displays the input signal information of HDMI terminal

Display Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTH	HDCP authentication status
MODE	HDMI mode status
BIST	HDCP Key status (Always display it with "--".)
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension colorimetry (AVI info)
RGB QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

[1-8] HDMI SIGNAL INFO 2

	1	5	10	15	20	25	30	35	40			
1			INFORMATION					AV1-30601-DIG-EHS				
			HDMI SIGNAL INFO 2									
5			H RES : 2200					COL SP : 422				
			V RES : 0563					COLMET : 709				
			H DE : 1920					ASPECT : 16 : 9				
			V DE : 0540					ACTIVE :				
			INTRL : INT					Same as pict				
10			V POL : POS					V FMT :				
			H POL : POS					1920x1080i@60				
			AUDIO : 48k					PIX RP : 00				
						PCM		SOURCE : PIONEER				
						20bit		DVR-DT90				
15												
16												

Displays input signal status of HDMI terminal

Display Item	Meaning
H RES	Number of horizontal pixels
V RES	Number of vertical lines
H DE	Number of effectively horizontal pixels
V DE	Number of effectively vertical lines
INTRL	Interlace (=INT) or progressive (=PRG)
V POL	VSYSN polarity
H POL	HSYSN polarity
AUDIO (first line)	Sampling frequency. (ex. DVD: 48kHz, CD: 44.1kHz) *1
AUDIO (second line)	Audio format PCM (PCM) or No PCM (no PCM)
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info) 422 or 444 or RGB *2
COLMET	Colorimetry (AVI Info)
ASPECT	Aspect (AVI Info)
ACTIVE	Active format (AVI Info)
V FMT	Video format (AVI Info)
PIX RP	Pixel count
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

*1: Confirm if this item is displayed when the audio is not outputted.

*2: If may not match to the state of emission devices when the color is abnormal.

Display of HDMI FACTORY and correspondence of resolution

Please confirm the following items when the picture doesn't come out.

Input Signal	FACTORY Display				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)@60	858	262 or 263	720	240	720x480i@60
480p (525p)@60	858	525	720	480	720x480p@60
1080i (1125i)@60	2200	562 or 563	1920	540	1920x1080i@60
720p (750p)@60	1650	750	1280	720	1280x720p@60
1080p (1125p)@60	2200	1125	1920	1080	1920x1080p@60
1080p (1125p)@24	2750	1125	1920	1080	1920x1080p@24
576i (625i)@50	864	312 or 313	720	288	720x576i@50
576p (625p)@50	864	625	720	576	720x576p@50
1080i (1125i)@50	2640	562 or 563	1920	540	1920x1080i@50
720p (750p)@50	1980	750	1280	720	1280x720p@50
1080p (1125p)@50	2640	1125	1920	1080	1920x1080p@50

A

B

C

D

E

F

A [2] PANEL FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[2-1]	PANEL INFORMATION	——	——
[2-2]	PANEL WORKS	——	——
[2-3]	POWER DOWN	——	——
[2-4]	SHUT DOWN	——	——
[2-5]	PANEL-1 ADJ (+)	——	——
[2-6]	PANEL-2 ADJ (+)	——	——
[2-7]	PANEL FUNCTION (+)	——	——
[2-8]	ETC. (+)	——	——
[2-9]	RASTER MASK SETUP (+)	——	——
[2-10]	PATTERN MASK SETUP (+)	——	——
[2-11]	COMBI MASK SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

C [3] PANEL MAIN FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[3-1]	PM NG INFO	——	——
[3-2]	PM STATE INFO	——	——
[3-3]	DP_RX INFO	——	——
[3-4]	PM_SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

D [4] OPTION

Operation item

No.	Function	Content	RS-232C
[4-1]	CH PRESET <=>	Set the channel map for production line	SCP
[4-2]	Digital AFT <=>	Set AFT of the Satellite digital broadcasting	AFT
[4-3]	SYNC DET (+)	Set the synchronized signal detection of VDEC	——
[4-4]	CTI (+)	Set the synchronized signal detection of VDEC	——

E [4-1] CH PRESET <=>

Exclusively used for production line.

[4-2] Digital AFT <=>

Exclusively used for production line.

[4-3] SYNC DET (+)

Exclusively used for technical analysis (details omitted).

F [4-4] CTI (+)

Exclusively used for technical analysis (details omitted).

[5] INITIALIZE

Operation item

No.	Function	Content	RS-232C
[5-1]	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
[5-2]	FINAL SETUP	Initialize flash memories on virgin product status	FST
[5-3]	DTB SERVICE MODE	Enter the Digital Tuner Service Menu	----
[5-4]	Wide XGA AUTO <=>	Exclusively used for technical analysis.	----
[5-5]	AUTO ADJUST. <=>	Perform the auto-adjustment setting process	----

[5-1] SIDE MASK LEVEL (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5								
10								
15	SIDE MASK LEVEL (+)							
16								

To configure sidemask level (To adjust the values, input signal is required).

Display Item	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255, Initial value: 115)	SML

Note: In this mode (SIDE MASK LEVEL), adjustment value cannot be changed with the VOLUME +/- keys.

[5-2] FINAL SETUP

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5	FINAL SETUP							
10								
15	DATA RESET <=>	: NO						
16								

- To reset each memory value to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to the previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.
When replacing the MAIN BLOCK Assy, the FINAL SETUP is required.

A

[5-3] DTB SERVICE MODE

	1	5	10	15	20	25	30	35	40
1			INITIALIZE			AV1-10501-DIG-EHS			
			DTB SERVICE MODE						
5									
10									
15			MODE SHIFT <=>				:YES		
16									

If the [ENTER/SET] key is kept on pressing for 5 second when the status of this menu is <YES>, shift to the DTB SERVICE mode screen. (Release from the SERVICE FACTORY mode.)

[5-4] WIDE XGA AUTO <=>

Exclusively used for technical analysis (details omitted).

D

[5-5] AUTO ADJUST. <=>

	1	5	10	15	20	25	30	35	40	
1		INITIALIZE				AV1-10501-PLV-EHS				
5										
10										
15		AUTO ADJUST. <=>				:YES				
16										

- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the auto-adjustment action executes.

E

- Be sure to power off with the remote control unit or disconnect and connect the AC cable after the auto-adjustment is completed.
- When some ICs on the MAIN BLOCK Assy are replaced individually, auto-adjustment is required. For details on IC numbers, see the list “■ Parts whose replacement is difficult” in “8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED.”
- When this unit is used with the HD AV Converter, the interlocking setting with the HD AV Converter is released. Reset it after the auto adjustment is completed.

F

6.3 DIGITAL TUNER SERVICE MENU

The Digital Tuner Service Menu is provided for collecting data for technological examination when the Digital Tuner has any problem in the market. This menu is introduced here just for reference.

[1] REMOTE CONTROL CODE IN DIGITAL TUNER SERVICE MENU

The following remote control cord is valid in the Digital Tuner Service Menu.

Remote Control Keys	Basic Functions	Remarks
↓ (DOWN)	Selecting the menu items and shifting the pages.	Shifting downward to the next item. Moving to the next lower page.
↑ (UP)		Shifting upward to the next item. Moving to the next upper page.
← (LEFT)	Selecting the setting value.	Modifying the setting of selected items.
→ (RIGHT)		
ENTER/SET	Shifting the menu layers	Shifting to the next menu screen.
RETURN		Shifting to the previous menu screen.
Numeric Keys	Numeric input	Input the numerical value.
POWER OFF	Power OFF	Turning the power off.
STANDBY/ON		
FACTORY	Factory ON/OFF	Release the Menu, then enter the Service Factory menu.
EXIT	MENU exit	After you exit the menu, the channel that was selected on the menu will be displayed.
MUTING	Muting	
HOME MENU	HOME MENU ON/OFF	

[2] HIERARCHICAL TABLE OF DIGITAL TUNER SERVICE MENU

Item	Remarks
<div>Large Item</div> <div>Middle Item</div>	
6.3 [3] Digital Tuner Service Menu	
6.3 [4] HMG Service Menu	
	Exclusively used for technical analysis: HomeMediaGallery-related information indication
6.3 [5] Digital	
Bandwidth	Exclusively used for technical analysis
Frequency	Exclusively used for technical analysis
Program Number	Exclusively used for technical analysis
Audio PID	Exclusively used for technical analysis
DTV Tuning Status	Exclusively used for technical analysis: Terrestrial digital broadcasting-related information indication
6.3 [6] Satellite	
Modulation	Exclusively used for technical analysis
Frequency	Exclusively used for technical analysis
Symbol Rate	Exclusively used for technical analysis
LNB POWER	Exclusively used for technical analysis
LNB BAND	Exclusively used for technical analysis
Program Number	Exclusively used for technical analysis
Audio PID	Exclusively used for technical analysis
SAT Tuning Status	Exclusively used for technical analysis: Satellite digital broadcasting-related information indication
6.3 [7] Software Version	
	Exclusively used for technical analysis: The software revision information that consists of it in DTB software

[3] DIGITAL TUNER SERVICE MENU SCREEN

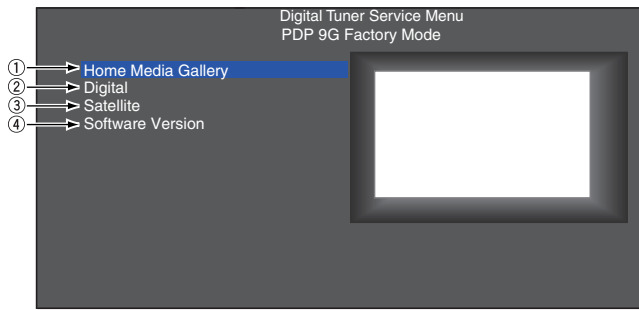


Fig.1 Digital Tuner Service Menu screen

Display a large item list of Digital Tuner Service Menu.
Select each item, and shift to each setting / information display screen.

- ① Home Media Gallery-related information indication
- ② Terrestrial digital-related setting / information indication
- ③ Satellite digital-related setting / information indication
- ④ Digital Tuner-related detailed software version indication

[4] HOME MEDIA GALLERY SCREEN

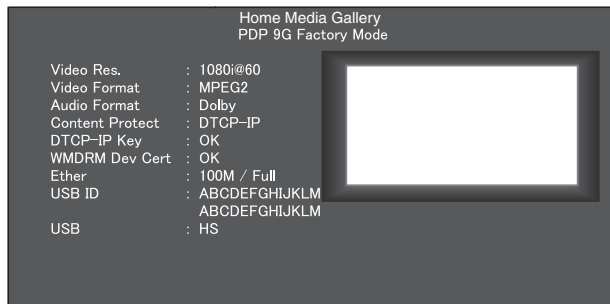


Fig.2 Home Media Gallery screen

Display the Home Media Gallery-related information.

[5] DIGITAL SCREEN

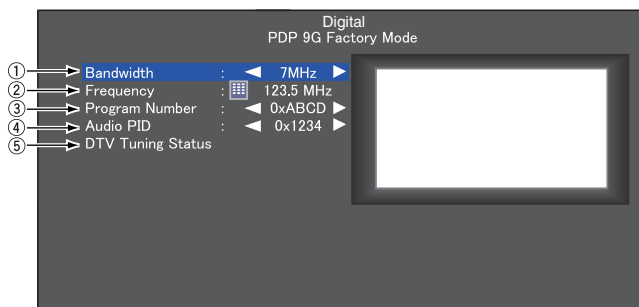


Fig.3 Digital screen

Display the Digital broadcasting-related setting / information indication.(except the satellite digital)

- ① The Bandwidth for receiving a digital broadcast can be selected. (7 MHz/8 MHz)
- ② The frequency can be set (up to 1 digit after the decimal point).
- ③ Program Number in the same stream: Service ID can be selected.
- ④ Audio PID in the same stream: Audio PID can be selected.
- ⑤ The DTV Tuning Status is displayed.

The data displayed on the DTV Tuning Status screen are as shown below:

The instructions for servicing using this screen is shown in "How to confirm the DTV Tuning Status on the Digital Tuner Service Menu" of section 5.2 [4]. Therefore, this screen is introduced here just for reference.

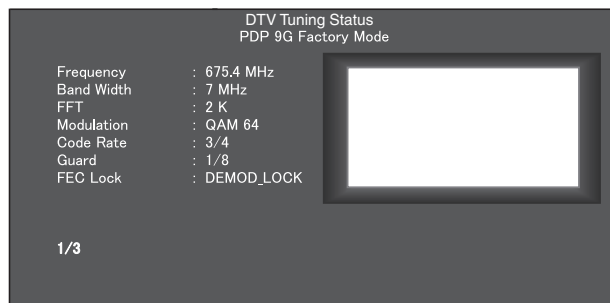


Fig.4 DTV Tuning Status (1/3) screen

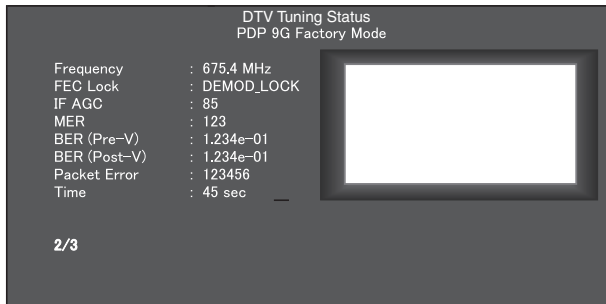


Fig.5 DTV Tuning Status screen (2/3) screen

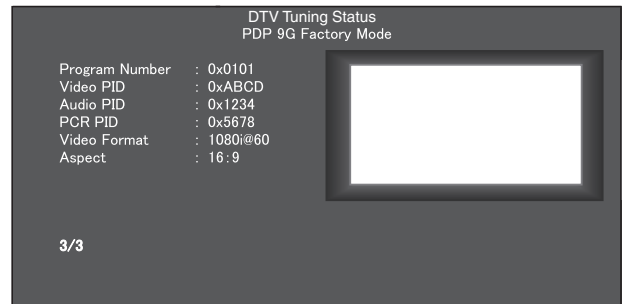


Fig.6 DTV Tuning Status screen (3/3) screen

[6] SATELLITE SCREEN

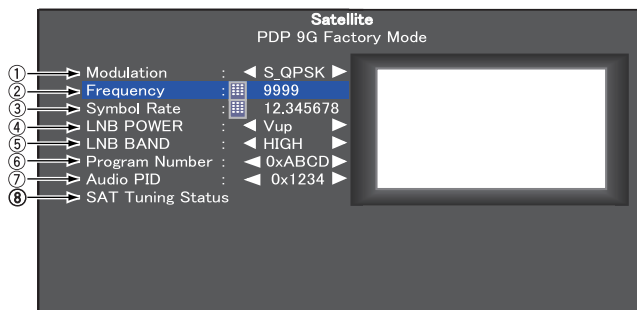


Fig.7 Satellite screen

Display the Satellite Digital broadcasting-related setting / information indication.

- ① The modulation method can be selected. (S_QPSK/S2_QPSK/S2_8PSK)
- ② The frequency can be set (0001 to 9999).
- ③ The symbol Rate can be set (1.000000 to 99.999999)
- ④ The LNB power voltage can be selected. (OFF/V/H/Vup/Hup)
- ⑤ The LNB Bandwidth can be selected. (Low/High)
- ⑥ Program Number in the same stream: Service ID can be selected.
- ⑦ Audio PID in the same stream: Audio PID can be selected.
- ⑧ The Tuning Status of Satellite Digital is displayed.

The data displayed on the SAT Tuning Status screen are as shown below:

The instructions for servicing using this screen will be provided as service information.

Therefore, this screen is introduced here just for reference.

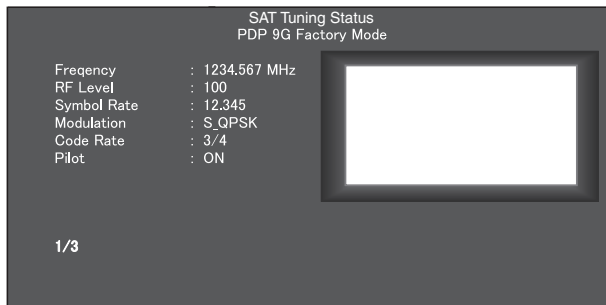


Fig.8 SAT Tuning Status (1/3) screen

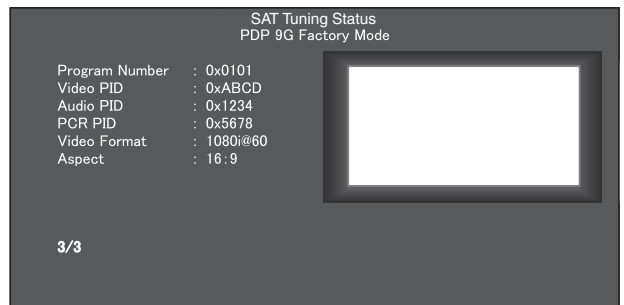


Fig.10 SAT Tuning Status (3/3) screen

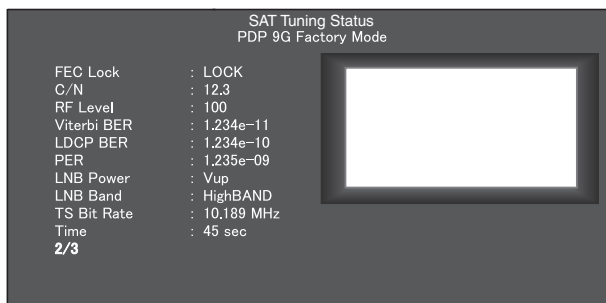


Fig.9 SAT Tuning Status (2/3) screen

[7] SOFTWARE VERSION SCREEN

The details are not described here, as this is provided for technical examination.

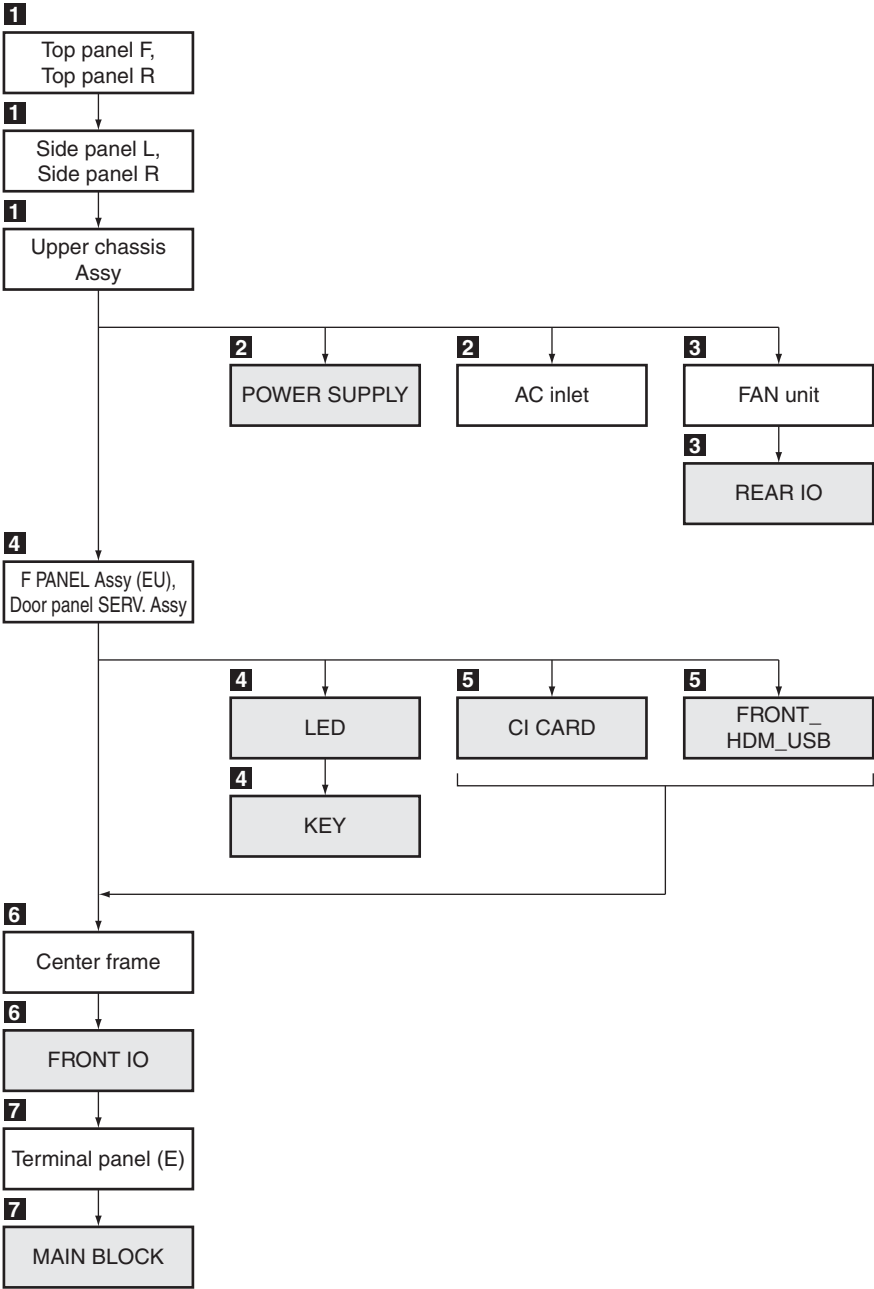
7. DISASSEMBLY

7.1 FLOWCHART OF REMOVAL ORDER

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

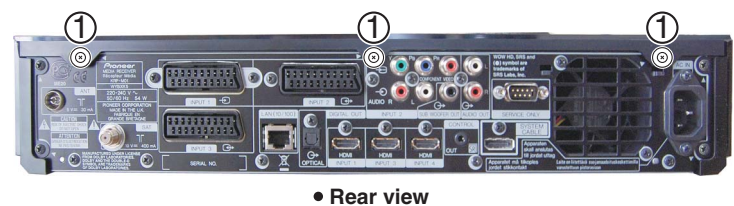
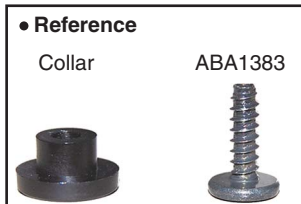
1 Exterior Section

The high-gloss resin parts of the exterior of this product are easily scratched.
During disassembly and reassembly of this product, be careful not to scratch the exterior.

Attach the protect film (GGP1121) to the inside surface of the door.
(For details on the place at which the protect film is to be attached, see “1.2 NOTES SPECIFIC TO THIS PRODUCT.”)

● Top panel F and R

- ① Remove the three collar and three screws.
(ABA1383)

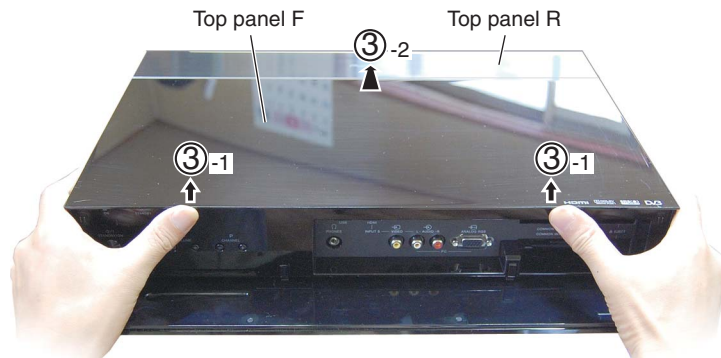


- ② Open the door panel Section.



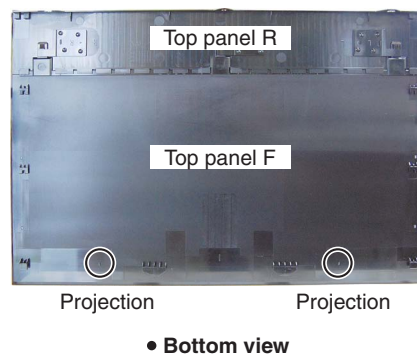
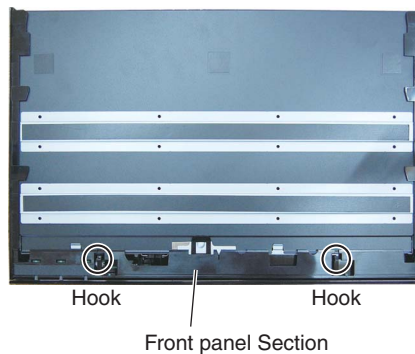
A

- ③ While pushing up at two places of the top panel using your thumbs, as shown in the photo below, to unhook the top panel, remove it by sliding it toward the rear panel.



B

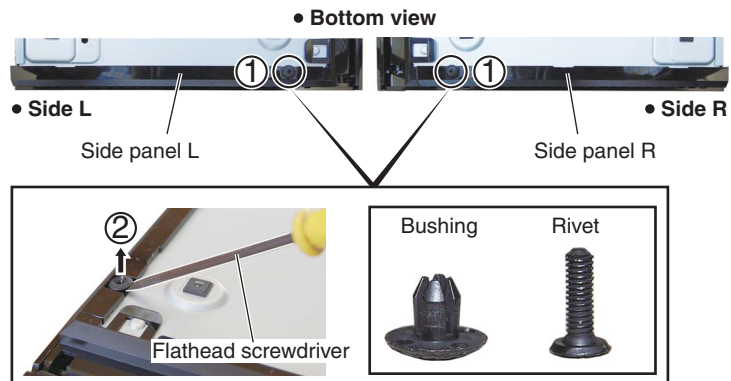
● Positions of the hooks



C

● Side panel L and R

- ① Remove the two rivets.
- ② Remove the two bushings, using a flathead screwdriver.

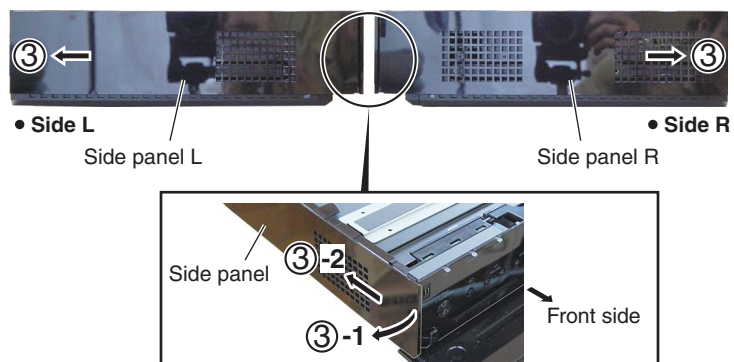


D

- ③ Remove the side panels L and R.

③-1 ③-2

Slide the side panel rearward, by stretching the front edge of the side panel outward, and remove it.



F

● Upper chassis Assy

- ① Remove the 14 screws. (BBZ30P060FTB)



● Rear view



● Side L

● Side R

● Screw tightening order

The other screws are random order.



- ② Remove the upper chassis Assy.

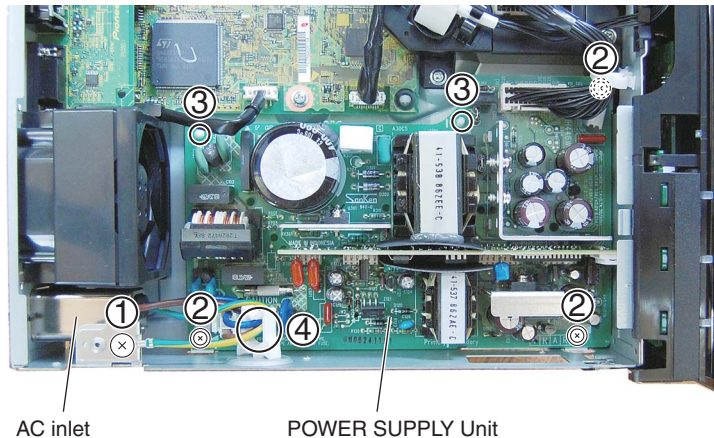


KRP-M01

A

2 POWER SUPPLY Unit

- ① Remove the one screw. (BMP40P080FSN)
- ② Remove the three screws. (BBB30P080FSN)
- ③ Remove the two circuit board spacers.
- ④ Release the jumper wire.



B

C

- ⑤ Remove the two screws. (ABZ30P080FTB)
- ⑥ Remove the AC inlet.

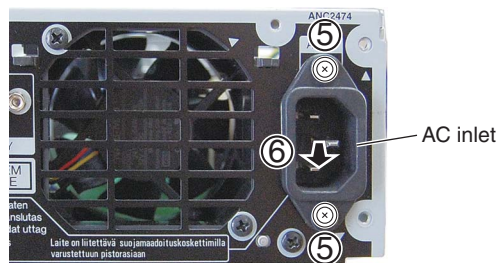
• An installation direction of the AC inlet



OK



NG

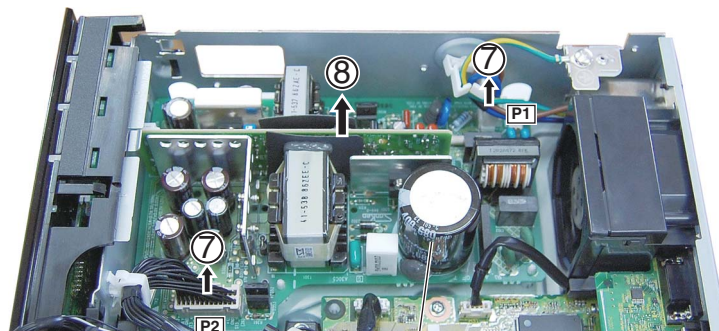


• Rear view

D

E

- ⑦ Disconnect the two connectors.
- ⑧ Remove the POWER SUPPLY Unit.



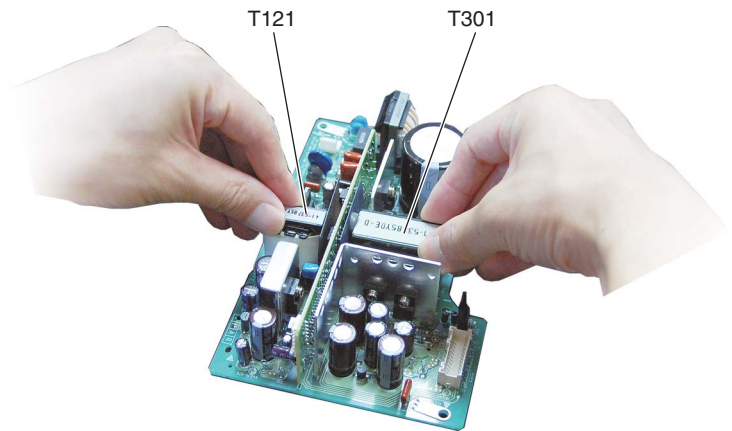
POWER SUPPLY Unit

F

Notes on Removing the POWER SUPPLY Unit

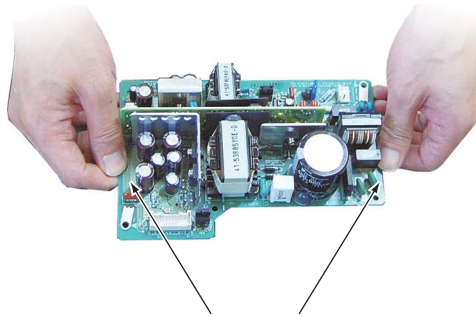
● How to lift up the POWER SUPPLY Unit

When you remove the POWER SUPPLY Unit from the chassis, first lift the board by pinching T121 and T301 transformers with your fingers. When the board is lifted up to a certain height, hold it by hand. NEVER hold the board by the radiator that is adjacent to the transformer.

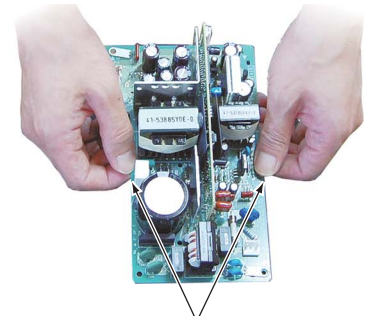


● How to hold the board after removing it from the chassis

The following two ways are recommended for holding the POWER SUPPLY Unit:

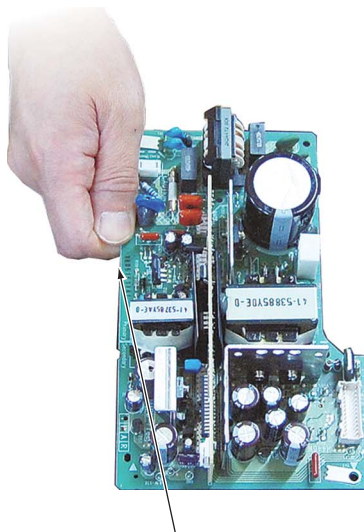


Hold at the center positions of both rims of the board.

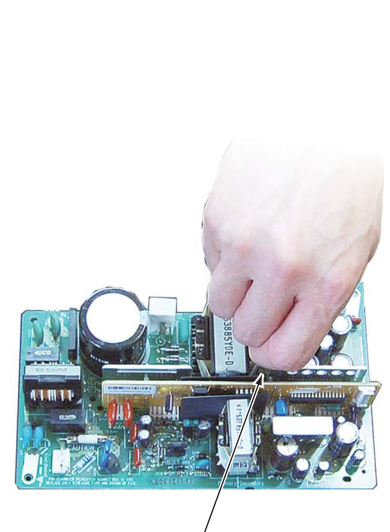


Hold at the center positions of both rims of the board.

Ways to be avoided:



NEVER hold a corner of the board with one hand.



NEVER hold the board by the radiator with one hand.

A

Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup

For 3-5 minutes after the unit is turned off, residual electric charge remains in the C310 capacitor on the POWER SUPPLY Unit. Before removing the POWER SUPPLY Unit from the chassis, be sure to confirm that residual charge inside the POWER SUPPLY Unit has become sufficiently low. (Without forced discharge, residual charge that remains after 3-5 minutes will fall to one-tenth or less, which is still about 20 V. Therefore, even after the POWER SUPPLY Unit is removed, it is recommended to perform forced discharge on the POWER SUPPLY Unit, as shown below.)

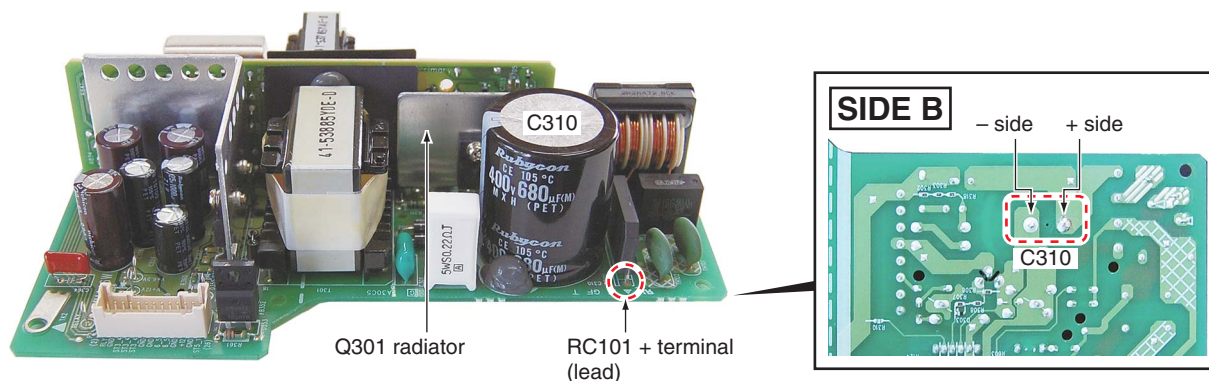
For quick removal of residual charge, forced discharge is recommended, using two 220 ohm/10 W resistors (440 ohm/20 W).

B

How to remove the POWER SUPPLY Unit

1. Make sure that the AC power cord is unplugged. Using a tester, check the voltage between the + terminal of RC101 bridge diode and Q301 radiator (equivalent to the voltage between two electrodes of C310).
2. Let the unit sit for more than 5 minutes until the voltage equivalent to that between two electrodes of C310 falls to under 20 V.
3. After checking that the voltage is under 20 V, disconnect the connectors of the POWER SUPPLY Unit and remove the POWER SUPPLY Unit.
4. Using two resistors mentioned above, completely discharge residual charge from C310.

C



After checking that the voltage at the measurement points (equivalent to the voltage between two electrodes of C310) is under 20 V, remove the POWER SUPPLY Unit. Then, completely discharge residual charge, using resistors.

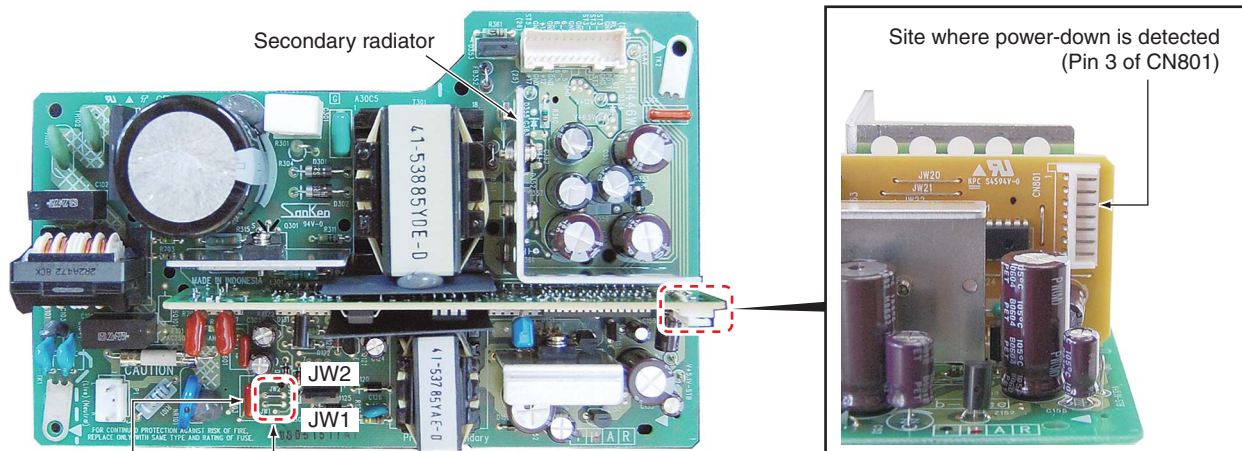
D

How to reset Standby power latchup

(In a case where the protection against Standby power excess voltage is activated)

1. After removing the causes of the malfunction, short-circuit between the JW1 and JW2 jumpers.
2. If the POWER SUPPLY Unit functions properly, after opening the above jumpers, the unit starts up.

E



F

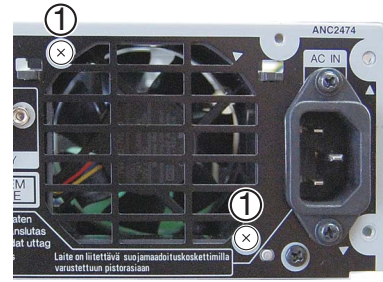
C603

To forcibly reset latchup of STBY3.4 V, short-circuit between JW1 and JW2 (near C603), using a flathead screwdriver or similar object. If the causes of the malfunction are removed, after opening the jumpers, the unit starts up.

3 REAR IO Assy

● FAN unit

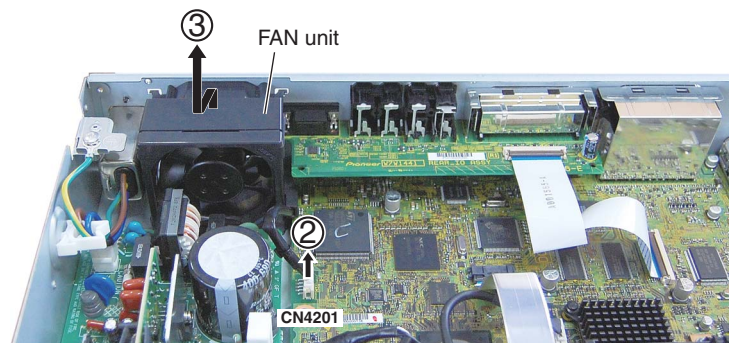
- ① Remove the two screws. (BPZ30P080FTB)



• Rear view

- ② Disconnect the one connector.

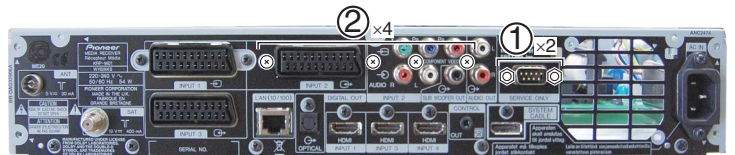
- ③ Remove the FAN unit.



● REAR IO Assy

- ① Remove the two hexagon headed screws. (ABA1382)

- ② Remove the four screws. (BPZ30P080FTB)



• Rear view

- ③ Disconnect the one flexible cable.

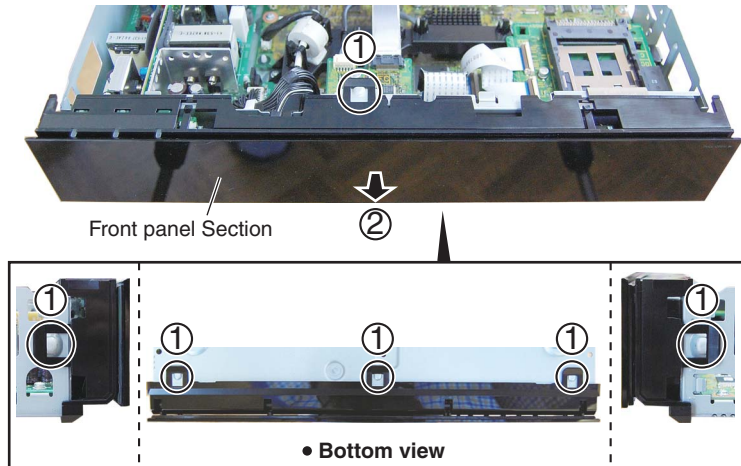
- ④ Remove the REAR IO Assy.



4 Front Panel Section

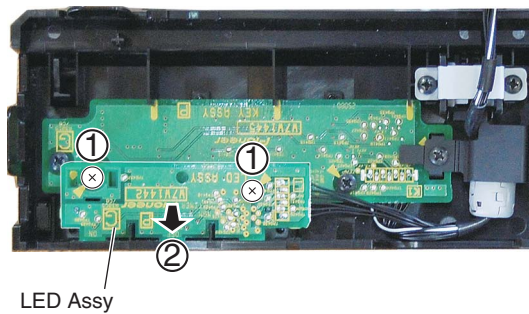
● Front panel Section

- ① Unhook the six hooks.
- ② Remove the front panel Section.



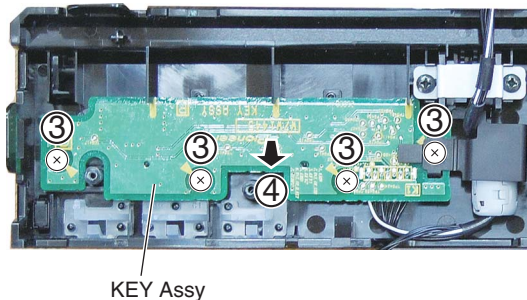
● LED and KEY Assys

- ① Remove the two screws. (BPZ30P080FTB)
- ② Remove the LED Assy.



- ③ Remove the four screws. (BPZ30P080FTB)
- ④ Remove the KEY Assy.

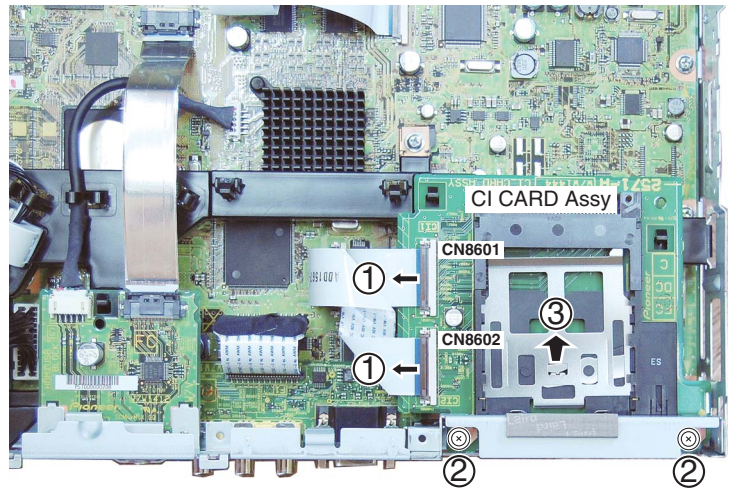
Note:
Before tightening screws, make sure that the protect film has been attached.
(For details on the place at which the protect film is to be attached, see "1.2 NOTES SPECIFIC TO THIS PRODUCT.")



5 CI CARD and FRONT_HDM_USB Assys

● CI CARD Assy

- ① Disconnect the two flexible cables.
- ② Remove the two screws. (ABZ30P060FTC)
- ③ Remove the CI CARD Assy.

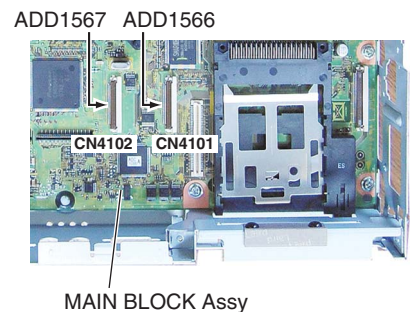
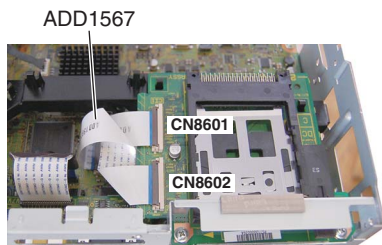
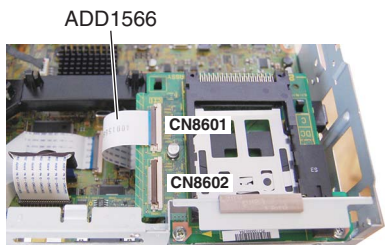


● Note on Connection of the Flexible Flat Cable for the CI CARD Assy

How to Check for Inverse Connection

After connecting the FFC cable for the CI CARD Assy, make sure that the part number printed on the upper surface of the cable is ADD1567.

ADD1567	Correctly connected
ADD1566	Inversely connected



Unit operation when the cable is inversely connected

	Activated operation	Unit operation
Unit	When activated	It starts up properly.
Slot 1: Lower slot (mounted on the MAIN BLOCK Assy)	When the circuits in the Card block are activated	They operate properly.
	When a card is inserted in Slot 1	They operate properly.
Slot 2: Upper slot (mounted on the CI CARD Assy)	When the circuits in the Card block are activated	They are not activated (no risk of being damaged, though).
	When a card is inserted in Slot 2	They are not activated (no risk of being damaged, though).

A

B

C

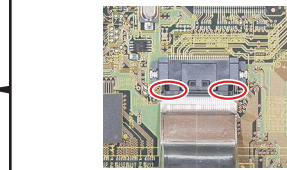
D

E

F

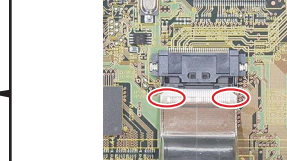
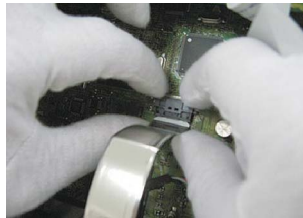
● Notes on Connecting the Shielded Flexible Flat Cable

OK



Push on the connector itself.

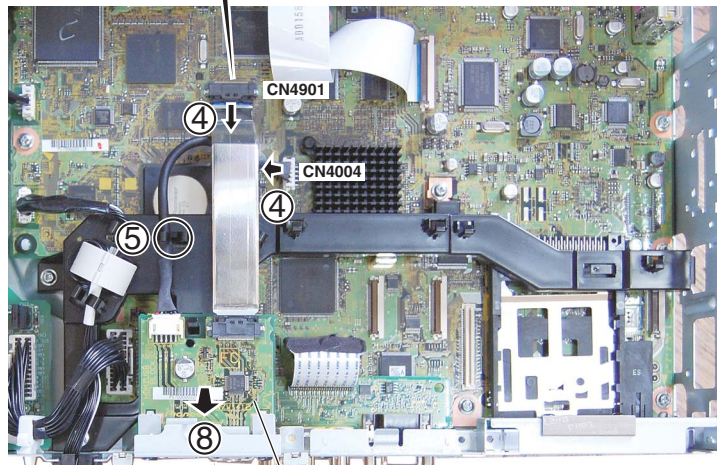
NG



Do NOT connect the connector by pushing with the cable.

● FRONT_HDM_USB Assy

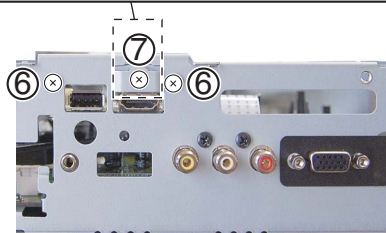
- ④ Disconnect the one flexible cable and one connectors.
- ⑤ Release the jumper wire.
- ⑥ Remove the two screws. (BBZ30P060FTB)
- ⑦ Remove the one screw. (VBA1088)
- ⑧ Remove the FRONT_HDM_USB Assy.



FRONT_HDM_USB Assy

Note:

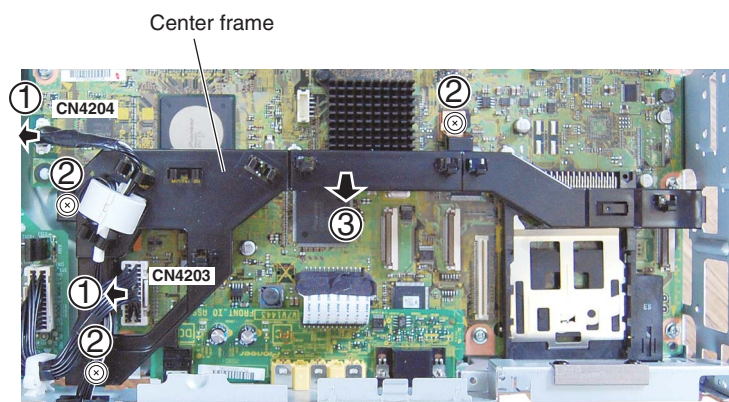
Do not use an electric screwdriver.
If the screw is over-tightened, the screw thread may be damaged.



6 FRONT IO Assy

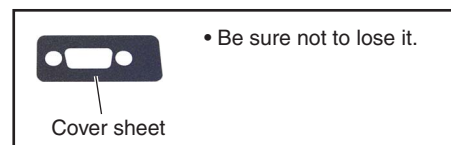
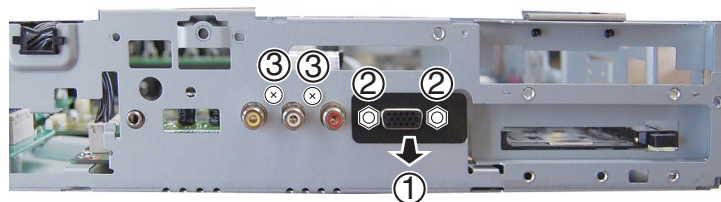
● Center frame

- ① Disconnect the two connectors.
- ② Remove the three screws. (ABA1383)
- ③ Remove the center frame.

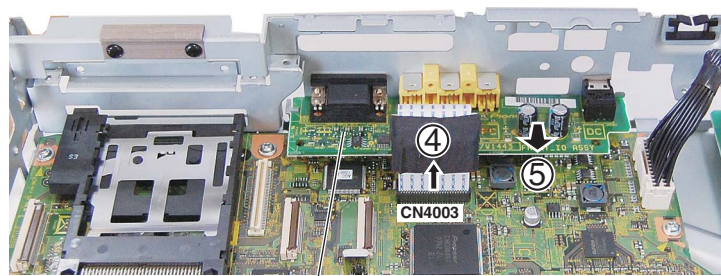


● FRONT IO Assy

- ① Remove the cover sheet.
- ② Remove the two hexagon headed screws. (ABA1382)
- ③ Remove the two screws. (BPZ30P080FTB)



- ④ Disconnect the one flexible cable.
- ⑤ Remove the FRONT IO Assy.

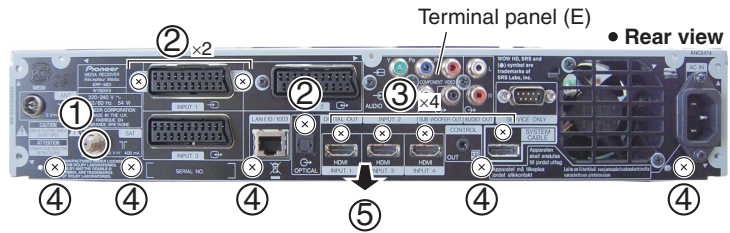


FRONT IO Assy

7 MAIN BLOCK Assy

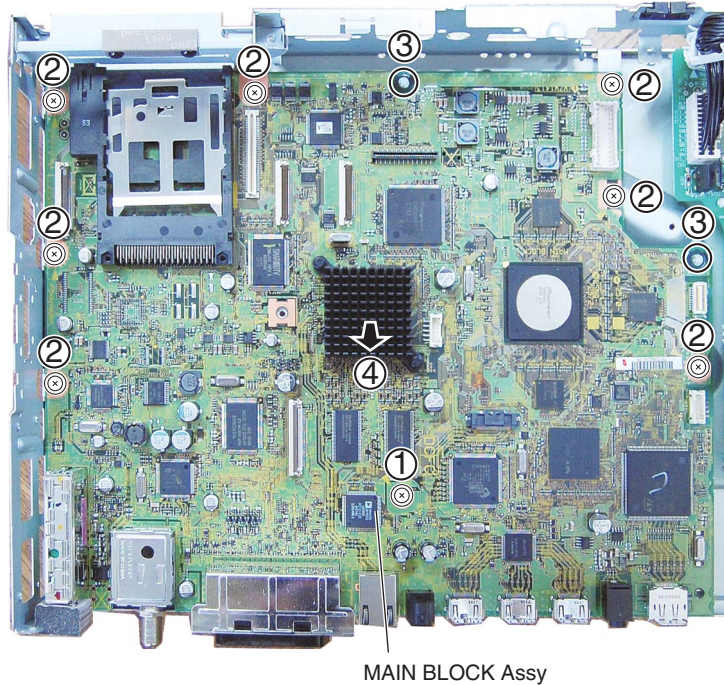
● Terminal panel (E)

- ① Remove the one nut. (BBN1005)
- ② Remove the three screws. (BPZ30P080FTB)
- ③ Remove the four screws. (BMZ30P060FTB)
- ④ Remove the five screws. (BBZ30P060FTB)
- ⑤ Remove the terminal panel (E).



● MAIN BLOCK Assy

- ① Remove the one screw. (AMZ30P060FTB)
- ② Remove the seven screws. (ABA1383)
- ③ Remove the two circuit board spacers.
- ④ Remove the MAIN BLOCK Assy.



8. EACH SETTING AND ADJUSTMENT



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	No adjustment required
MAIN BLOCK Assy (*)	➡	Execute section [5-5] AUTO ADJUSTMENT of 6.2 [5] INITIALIZE.
Other assemblies	➡	No adjustment required

(*) : When replacing the MAIN BLOCK Assy, be sure to perform the FINAL SETUP.

■ Replacement of the whole Assy is required when one of the following part on the corresponding Assy is in failure

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AXY1204	POWER SUPPLY Unit	U0003	—	—	The maker forbids Pioneer from repairing the Assy.
AWV2570 AWV2572	MAIN BLOCK Assy	IC6403	DTV Flash	S29GL512P10TFIR1-K (AGC1089)	Because ID data (MAC address and data on keys) have been stored
		IC6001	SYSTEM IC (BCM7404)	BCM7404XKPB11G-K	Because adjustments and data writing at the level of production line are required after replacement
		IC5002	HDCP EEPROM	BR24L02FV-W	
		IC5003	HDCP EEPROM	BR24L02FV-W	
		IC5004	HDCP EEPROM	BR24L02FV-W	
		IC7301	FRONT HDCP EEPROM	BR24L02FV-W	
		IC7004	EMMA2 EEPROM	BR24L64F-W	
		IC6701	ARIA FLASH	S29GL016A90TFIR2-K (AGC1088)	
		IC6811	IF UCOM	AGC1086	
		IC7202	EMMA2 FLASH	S29GL032N90TFIO4-K (AGC1087)	
		IC6201	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6202	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6203	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6204	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
AWV2571 (AWW1443)	FRONT_IO Assy	IC8501	PC EEPROM	BR24L01AFJ-W	Because adjustments and data writing at the level of production line are required after replacement

A

Part whose replacement is difficult

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AWV2570 AWV2572	MAIN BLOCK Assy	IC7003	SYSTEM IC (EMMA2)	UPD61123F1-100KA3A-K	Because these ICs are packaged in BGA
		IC6501	ASIC (ARIA)	PD6568A-K	
		IC6702	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6703	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6704	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC4801	ADC	AD9985KSTZ	Because these ICs require readjustment after replacement
		IC5101	AV SW	R2S11006FT	
		IC5501	RGB SW	R2S11001FT	
		IC4702	VDEC	CM0048BF	
		U5301	DVB-T	AXF1191	Because the part has many pins (from G9, through-hole print will be adopted)
		U5201	DVB-S2	AXF1195	
		JA5601	CI connector	AKP1341	Because the part has many pins
		JA7502	Scart connector	AKP1265	
		JA8801	Scart connector	AKP1266	
		IC4901	HDMI	SII9135CTU-K	Because a radiation pad is provided
		IC5201	S2 demodulation IC	STV-0903	
		IC4601	Regulator	LTC3407EMSE-2	
		IC4501	Regulator	BD8624EFV	
		IC4503	LNB Regulator	LNBH23PP-TBB	

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Adjustment Procedures After a Part that Requires Readjustment is Replaced

Execute section “[5-5] AUTO ADJUST. <=>” of “6.2 [5] INITIALIZE.”

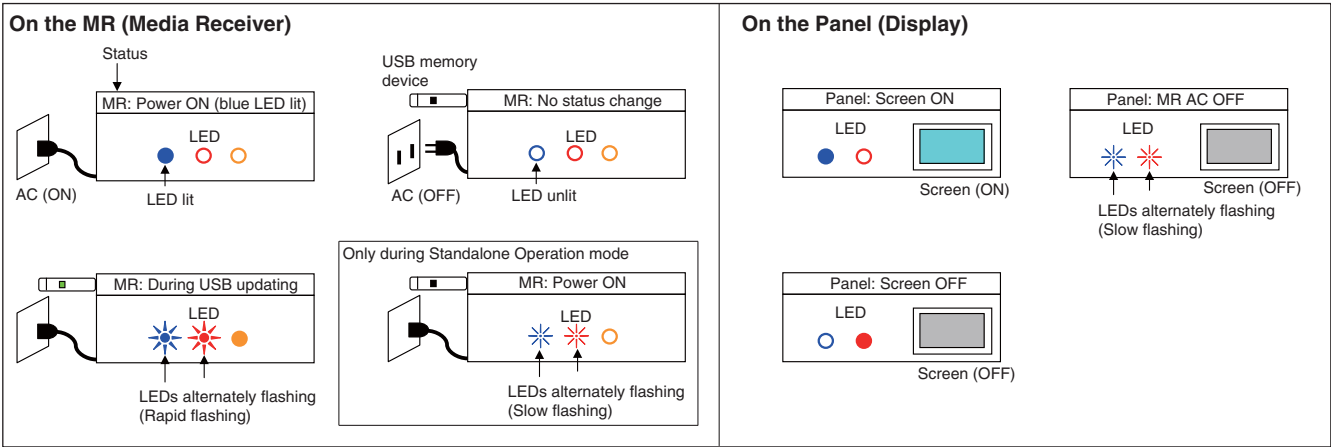
■ Preparation

Expand the image-file folder for USB updating in the root directory of the USB memory device.

Example: Folder construction after expansion in the root directory of the USB memory device

(With the nonencrypted folder)	[update] - boot.img - update.ctl - update.iso - update.lst	An encrypted image-file folder for USB updating will be released for general users.
(With the encrypted folder)	[update] - boot.img - update.ctl - update.enc - update.key - update.lst	

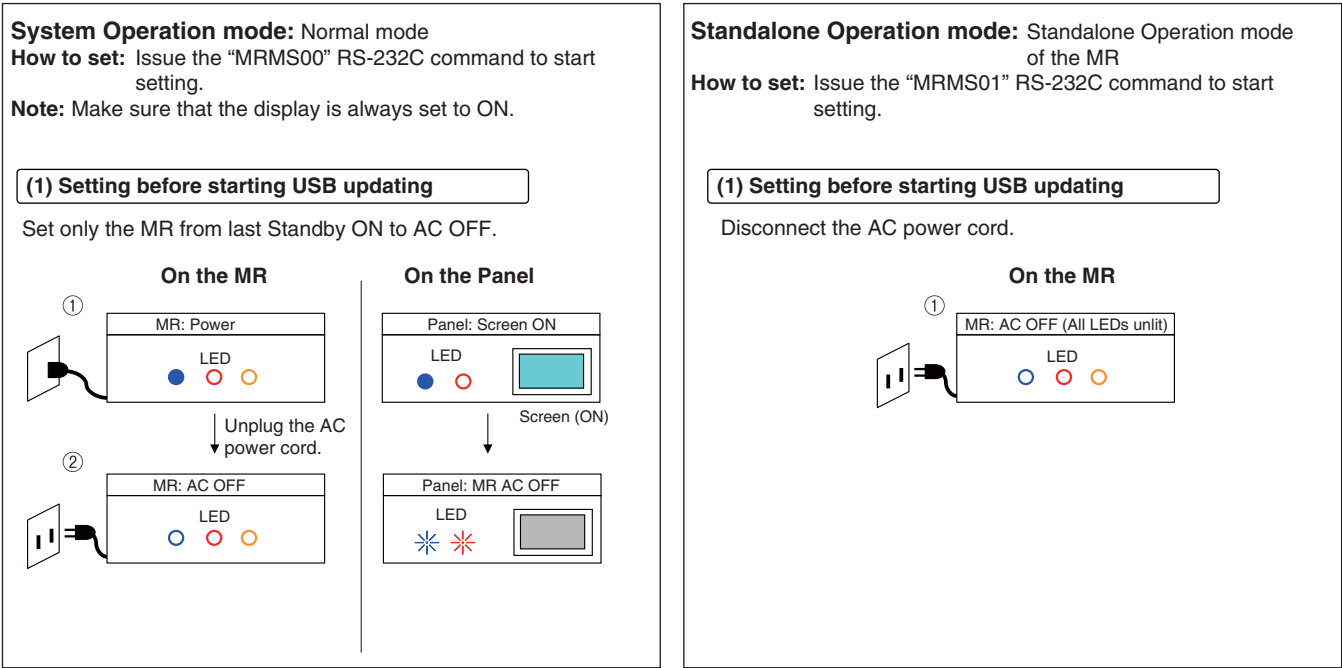
■ Description of the figures



■ Procedures

The methods for USB updating in System Operation mode and Standalone Operation mode of the MR are described below.

Note: Make sure that the display is always set in System Operation mode.

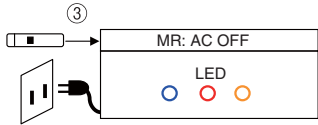


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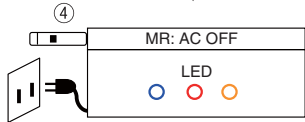
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

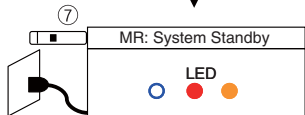
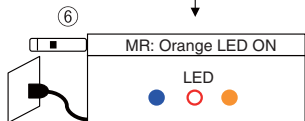
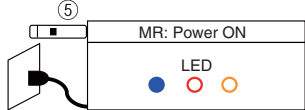
On the MR



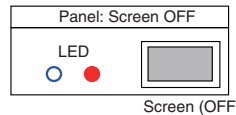
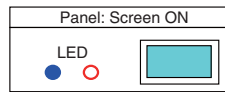
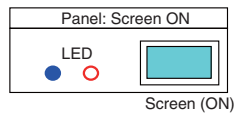
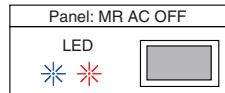
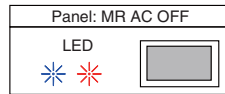
↓ Connect a USB memory device.



↓ Plug in the AC power cord.



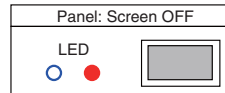
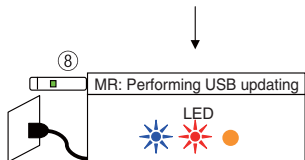
On the Panel



Note: If you interrupt the updating procedure in this step, updating is not started, and normal startup will begin.

NEVER use the remote control unit. (Especially DO NOT use the Power key.)

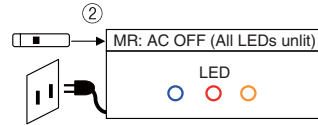
[If you use any key on the remote control unit in Steps ⑤ to ⑦]
If the unit does not shift to Step ⑧, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑧, continue the updating procedures as described.



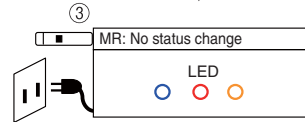
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

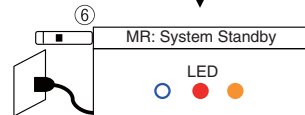
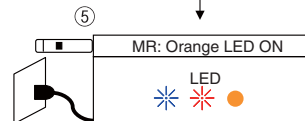
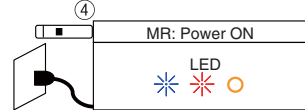
On the MR



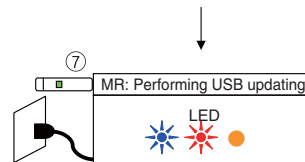
↓ Connect a USB memory device.



↓ Plug in the AC power cord.

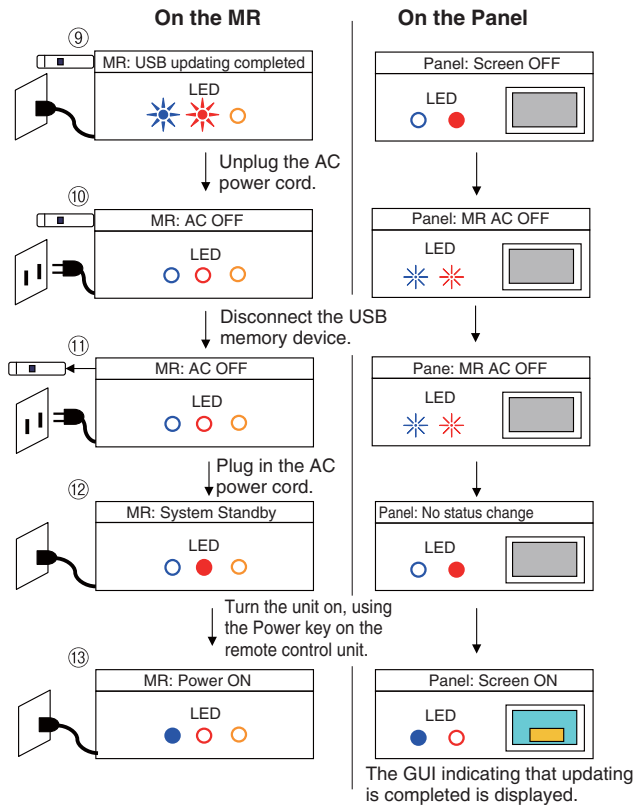


[If you use any key on the remote control unit in Steps ④ to ⑥]
If the unit does not shift to Step ⑦, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑦, continue the updating procedures as described.



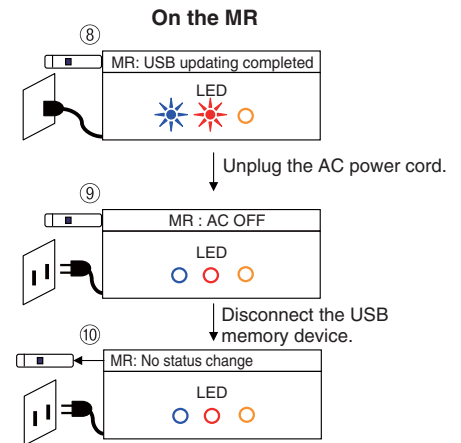
(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



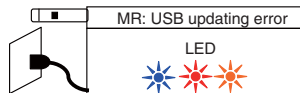
Return the MR to System Operation mode, by sending a command via the RS-232C connector.

How to set: Send the "MRMS00" command via the RS-232C connector.

In Standalone Operation mode of the MR, the GUI indicating that updating is completed is not displayed.

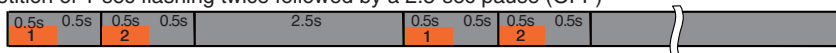
List of frequency of LED (orange) flashing when updating fails

If updating is interrupted, the orange LED flashes to warn you of the error.



Frequency of Orange LED Flashing	Error Content	Details
1	(Not used)	
2	Version error	The same version or a newer version of software has already been loaded.
3	USB update startup error	Startup of USB updating failed.
4	DTV Update Error	Updating of the DTV software failed.
5	MAIN Download Error	Updating of the MAIN microcomputer software failed.
6	ARIA Download Error	Updating of the ASIC software in the previous stage failed.
7	ZEUS Download Error	Updating of the ASIC software in the later stage failed.
8	Module Download Error	Updating of the module microcomputer software failed.
9	IF Download Error	Updating of the IF microcomputer software failed.
10	USB disconnection	Abnormality in the USB memory device
11 to 13	Reserved	-
14	Destination error	The software for a different destination (Europe/North America/Australia) was used for updating.

Example: In a case where the orange LED flashes twice (version error)
Repetition of 1-sec flashing twice followed by a 2.5-sec pause (OFF)



Under the following conditions, USB updating procedures will be interrupted at Step 5 above, and normal startup will begin, but the LED does not flash for error indication.

Conditions under which the LED will not flash for error indication

- Any USB updating file is damaged
- Not all USB updating files are stored in the USB memory device
- The USB updating files are modified
- The USB memory device is defective

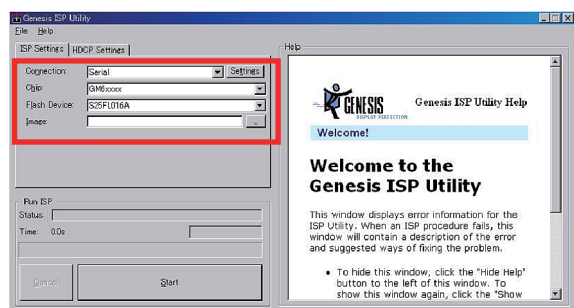
8.3 HOW TO UPDATE DISPLAY PORT FIRMWARE

1. Preparation of Tools

1. Activate the "ISPUtility xxxxxxxx.exe" file to install the ISP Utility.
On each screen, select "Next" until the installation wizard is finished.
 2. Activate the "CGProbe Redistributable xxxx.exe" file.
On each screen, select "Next" until the wizard is finished.
 3. Place the following files in the designated paths:
chip.xml
C:\Program Files\Genesis Microchip\ISP Utility\SAFELite-ISP_S25FL016A.hex
C:\Program Files\Genesis Microchip\ISP Utility\safe-lite
- Note:** If you changed the program installation path, the above-mentioned paths may be different.

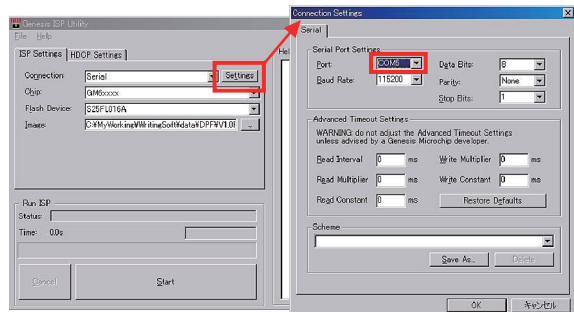
2. Updating

1. Connect the PC with the Media Receiver (MR) or Panel (Display), using an RS-232C straight cable.
2. Set the connected MR or Panel to Standby mode.
3. Disconnect the DP cable.
4. Start up the program for sending RS-232C commands:
Baud rate: 9600
COM port: Select, according to the environment of the PC.
5. Send the "UFW" command. Check that the red and blue LEDs flash.
6. Issue a command corresponding to the firmware to be updated.
[In a case where the DP firmware on the MR is updated]
Issue the "DPT" command.
[In a case where the DP firmware on the display is updated]
Issue the "DPR" command.
7. With the program for sending RS-232C commands, terminate the connection.
8. Start up the ISP Utility program and set up the ISP Settings screen.

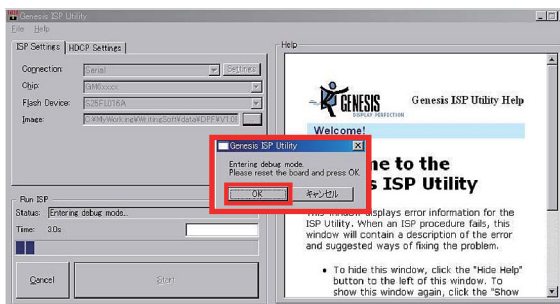


Connection: Serial
Chip: GM6xxxx
Flash Device: S25FL016A
Image: Select the ".hex" file to write to.

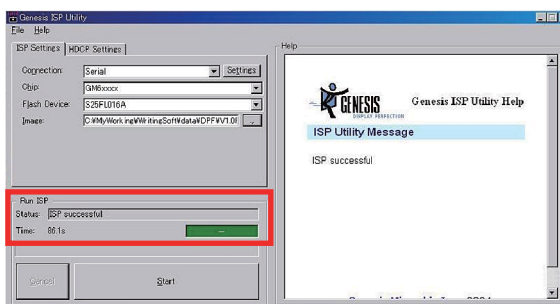
When "Serial" is selected in the "Connection" box, selection of Com ports is enabled. Click on "Settings" then select a Com port, according to the environment of the PC.



9. After all necessary settings are completed, click on Start to start updating.
10. When the following message is displayed, click on OK.

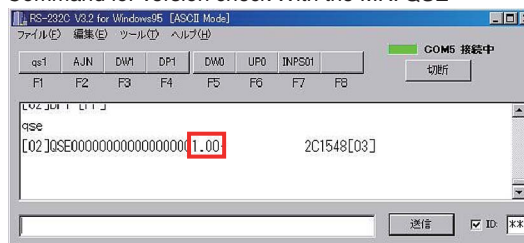


11. The current status is displayed in the "Status" box. When "ISP Successful" is displayed, updating is completed successfully.



12. Terminate the utility program and turn the MR or display off then back on again.
With the program for sending RS-232C commands, reestablish the connection. Then send the command for version check.

Command for version check With the MR: QSE



Command for version check with the display: QSB



13. Check that the version has been properly updated. This completes the updating procedures.

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KRP-M01

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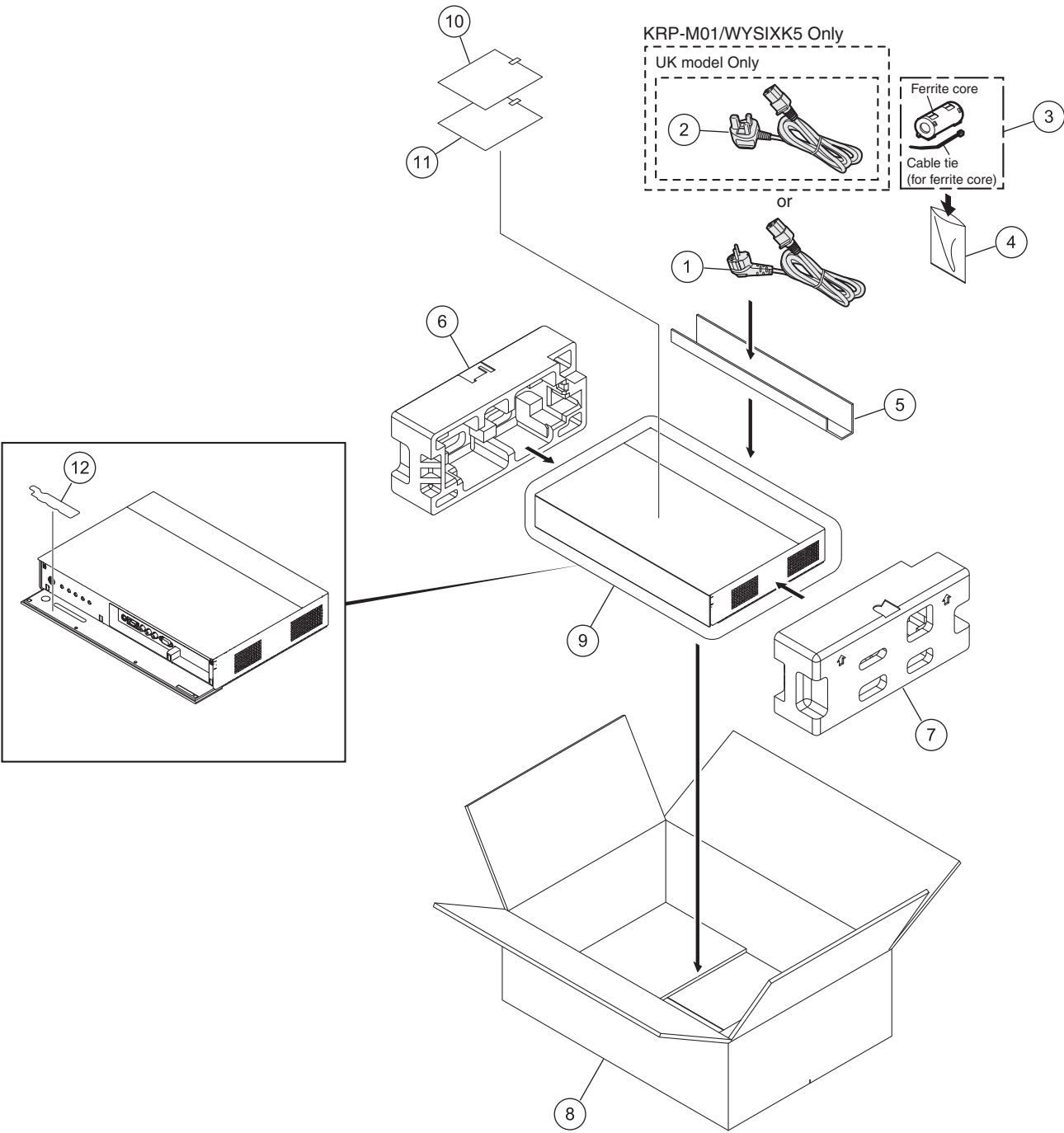
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9. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
⚠	1	Power Cable	ADG1214
⚠	2	Power Cable	See Contrast table (2)
⚠	3	Ferrite Core (L5208)	ATX1039
	4	Vinyl Bag	AHG1337
	5	ACC Carton	See Contrast table (2)
	6	Pad L	See Contrast table (2)
	7	Pad R	See Contrast table (2)
	8	Carton	See Contrast table (2)
	9	Mirror Mat	AHG1420
	10	Caution Card	See Contrast table (2)
	11	Film Caution Card	See Contrast table (2)
	12	Protect Film	GGP1121

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>KRP-M01/WYSIXK5</u>	<u>KRP-M01/WYSXJ5</u>
⚠	2	Power Cable	ADG1223	Not used
	5	ACC Carton (E)	AHD3677	Not used
	5	ACC Carton (G)	Not used	AHD3679
	6	Pad L (E)	AHA2735	Not used
	6	Pad L (G)	Not used	AHA2739
	7	Pad R (E)	AHA2736	Not used
	7	Pad R (G)	Not used	AHA2740
	8	Carton (E)	AHD3674	AHD3725
	10	Caution Card	ARM1439	ARM1440
	11	Film Caution Card	ARM1448	ARM1449

9.2 EXTERIOR SECTION

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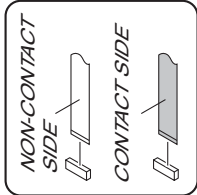
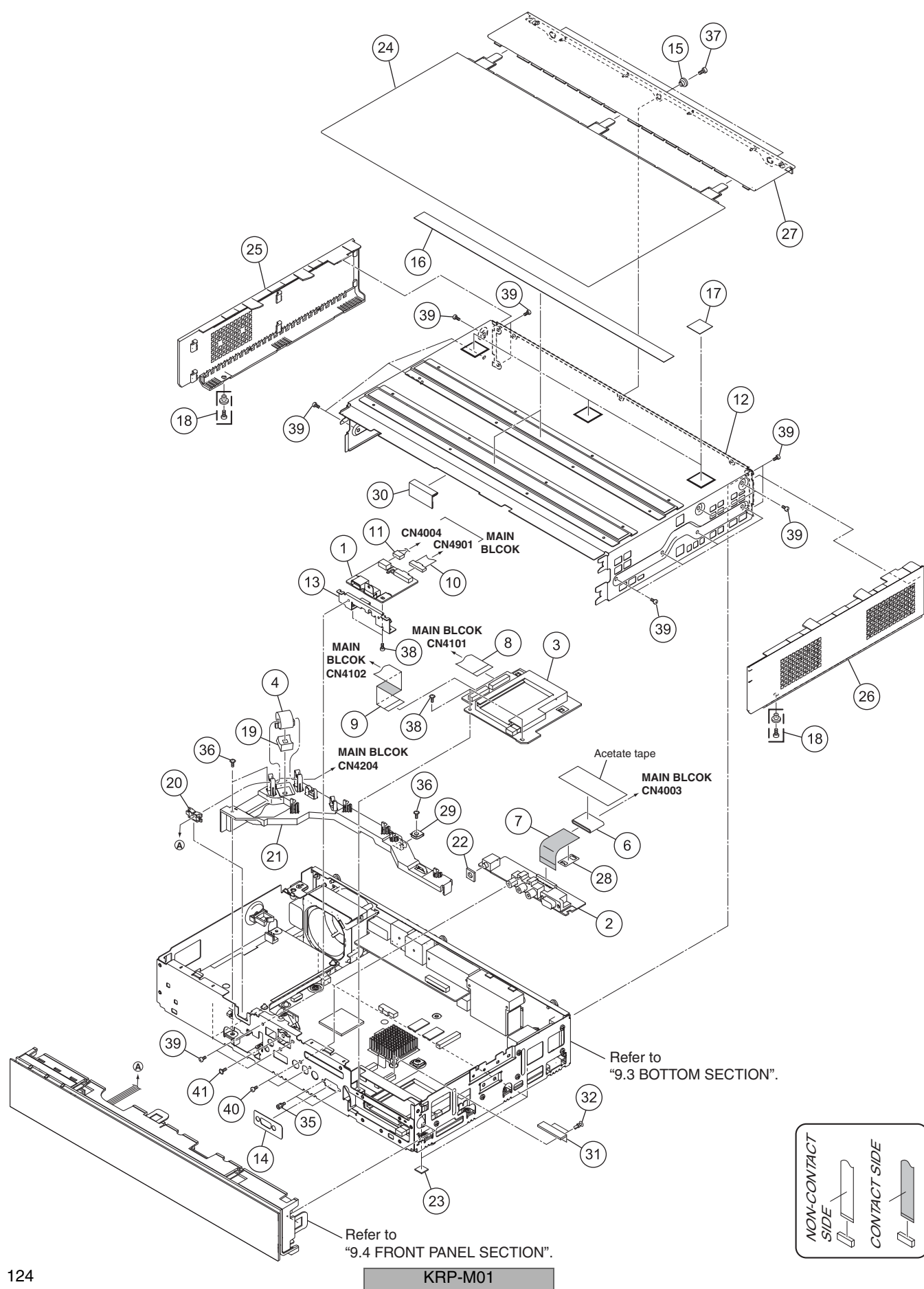
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(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FRONT_HDM_USB Assy	AWW1412	21	Center Frame	AMR3844
2	FRONT IO Assy	AWW1443	⚠ 22	Gasket HP	ANK1994
3	CI CARD Assy	AWW1444	23	Rubber Foot	VEB1349
⚠ 4	Ferrite Core (F1001)	ATX1034	24	Top Panel F	AAK2940
5	•••••		25	Side Panel L	AAK2941
⚠ 6	Ferrite Core (F1)	ATX1073	26	Side Panel R	AAK2942
7	Flexible Cable (J201)	ADD1564	27	Top Panel R	AAK2946
8	Flexible Cable (J204)	ADD1566	28	Ferrite Stopper	AEC1981
9	Flexible Cable (J205)	ADD1567	⚠ 29	Earth Plate MAIN	ANG3219
10	30P Shield FFC (J101)	ADF1042	⚠ 30	Gasket UP2	ANK1999
11	USB Cable (J102)	ADX3713	⚠ 31	Gasket CI	ANK1996
12	Upper Chassis Assy	See Contrast table (2)	32	Rivet A	BEC1158
13	PCB Holder	See Contrast table (2)	33	•••••	
14	Cover Sheet	AAK2850	34	•••••	
15	Collar	ABN1095	35	Hexagon Headed Screw	ABA1382
16	Upper Cushion	AEB1504	36	Screw	ABA1383
17	Top Cushion	AEB1505	37	Screw	ABA1391
18	Scrivet	AEC1657	38	Screw	ABZ30P060FTC
19	Ferrite Core Holder	AEC1818	39	Screw	BBZ30P060FTB
20	Edge Saddle	AEC1946	40	Screw	BPZ30P080FTB
			41	Screw (FE)	VBA1088

(2) CONTRAST TABLE

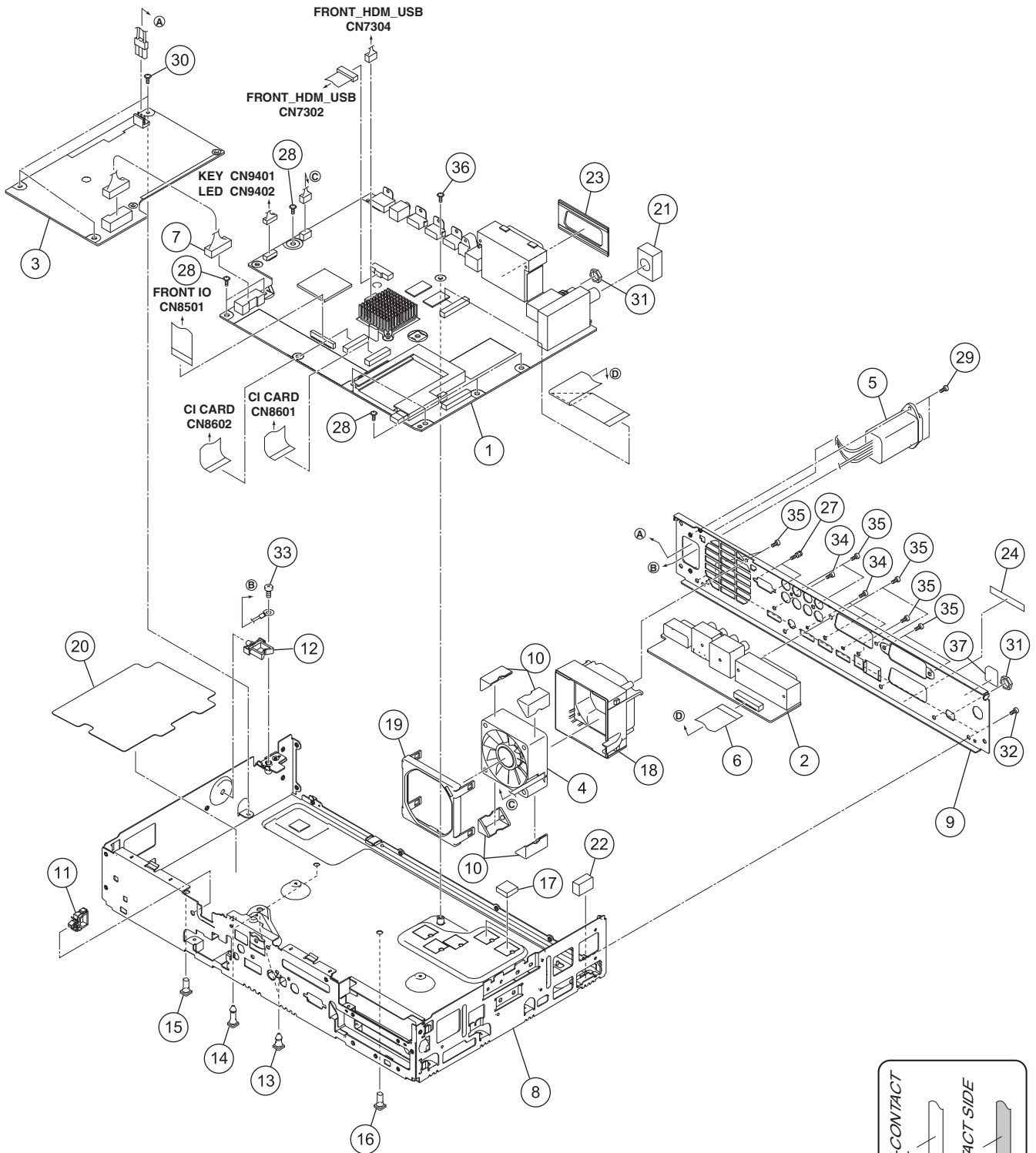
KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	12	Upper Chassis Assy	ANA2187	ANA2224
	13	PCB Holder	ANG3186	ANG3217

9.3 BOTTOM SECTION



Cleaning paper :
GED-008



(1) BOTTOM SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN BLOCK Assy	AWW1413	⚠	21	Gasket EU	ANK1972
	2	REAR IO Assy	AWW1441		22	Gasket MA	ANK1985
⚠	3	POWER SUPPLY Unit	AXY1204	⚠	23	Gasket SC	ANK1989
⚠	4	DC FAN Motor 60 x 25L	AXM1068	NSP	24	Serial Label	ARW1100
⚠	5	AC Inlet (CN1)	AKP1339		25	•••••	
	6	Flexible Cable (J203)	ADD1565		26	•••••	
	7	26P Housing Wire (J111)	ADX3674		27	Hexagon Headed Screw	ABA1382
	8	Base Chassis Assy	See Contrast table (2)		28	Screw	ABA1383
	9	Terminal Panel (E)	See Contrast table (2)		29	Screw	ABZ30P080FTB
	10	Floating Rubber 60	AEB1410		30	Screw	BBB30P080FSN
	11	Reuse Clamp	AEC2129		31	Washer Faced Nut	BBN1005
	12	Reuse Wire Saddle	AEC2134		32	Screw	BBZ30P060FTB
	13	Circuit Board Spacer	AEC2150		33	Screw	BMP40P080FSN
	14	Circuit Board Spacer	AEC2151		34	Screw	BMZ30P060FTB
	15	Circuit Board Spacer	AEC2152		35	Screw	BPZ30P080FTB
	16	Circuit Board Spacer	AEC2163		36	Screw	AMZ30P060FTB
	17	Silicon Sheet	AEH1182	NSP	37	Gost-R Label	ARW1126
	18	FAN Holder 60 A	See Contrast table (2)				
	19	FAN Holder 60 B	See Contrast table (2)				
	20	Insulation Sheet	AMR3891				

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	8	Base Chassis Assy	ANA2186	ANA2225
	9	Terminal Panel (E)	ANC2474	ANC2480
	18	FAN Holder 60 A	AMR3845	AMR3918
	19	FAN Holder 60 B	AMR3846	AMR3919

1 2 3 4

9.4 FRONT PANEL SECTION

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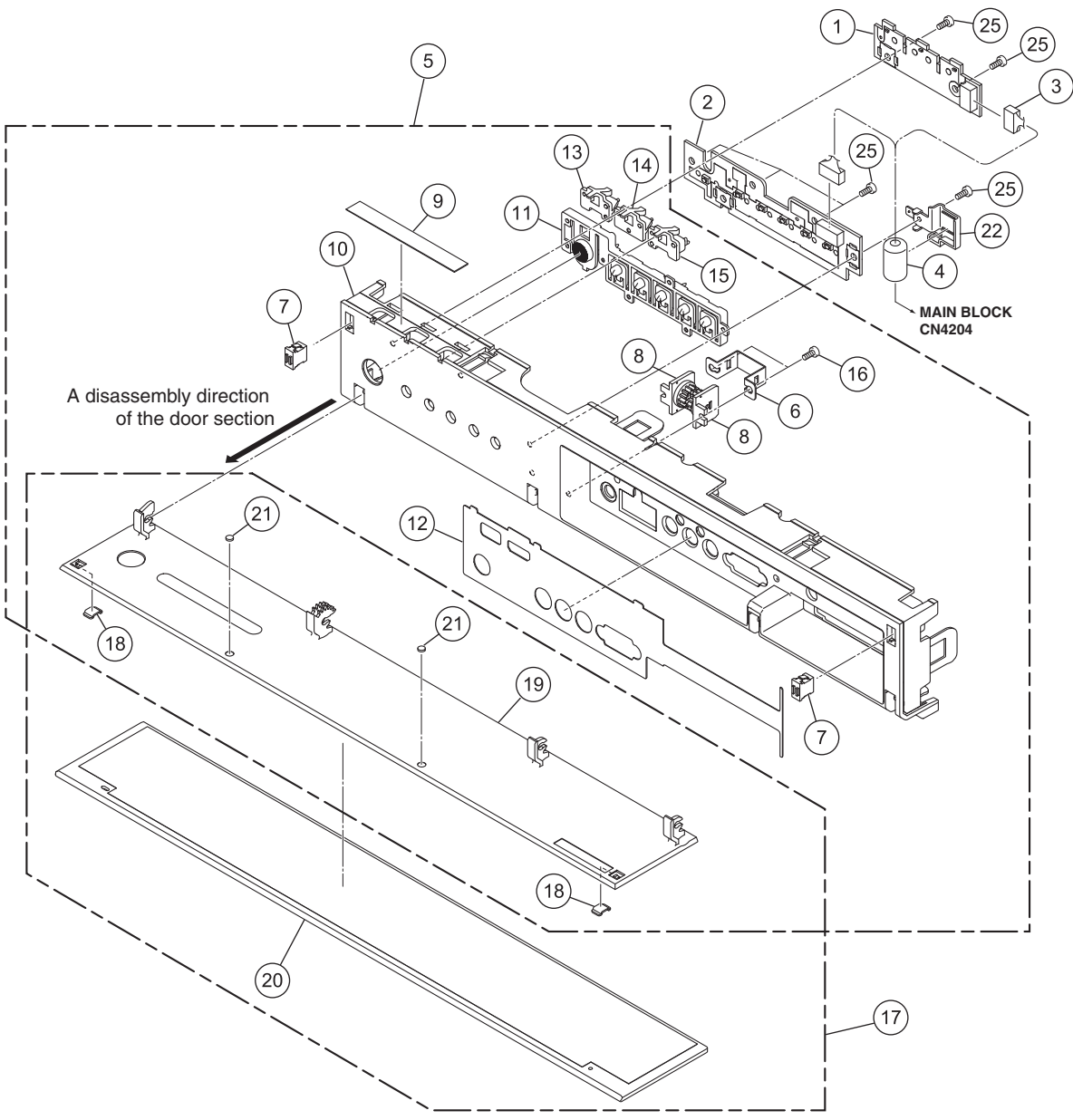
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A

■ When Replacing the F PANEL Assy (E)

When replacing the F PANEL Assy (E), discard the following parts of the new Assy kit for service and use the parts from the original door panel:

No.18	Door catcher
No.19	Door base
No.21	Door cushion

■

■ Reassembly Procedures for the Door Panel Service Kit

• Component parts of the GXX1283 Door Panel Service Kit

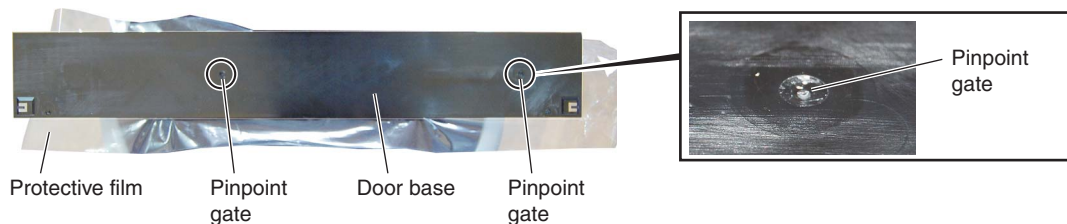
B

No.18	Door catcher (x2)
No.19	Door base (x1)
No.20	Door panel (x1)
No.21	Door cushion (x2)

■

- ① Check that two marks of pinpoint gates do not protrude from the surface of the door base to which the door panel is to be attached.
Do NOT peel off the protective film of the door base in this step.
Peel it off after all the reassembly procedures are completed.

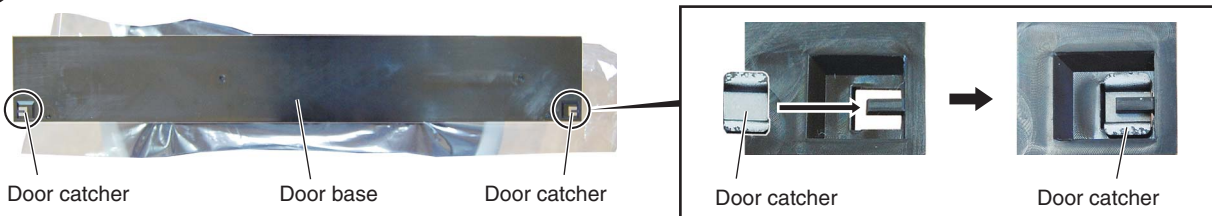
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- ② Attach the two door catchers.

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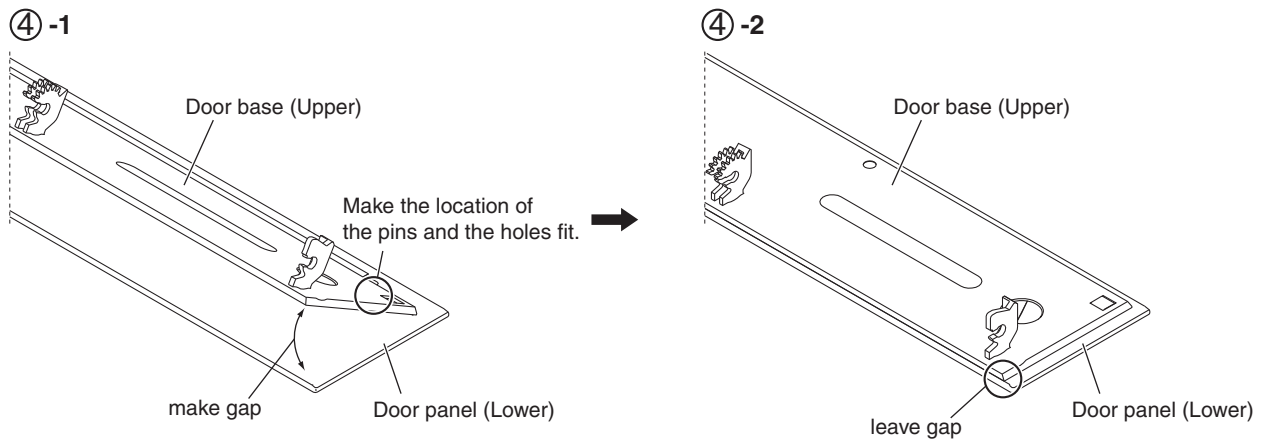
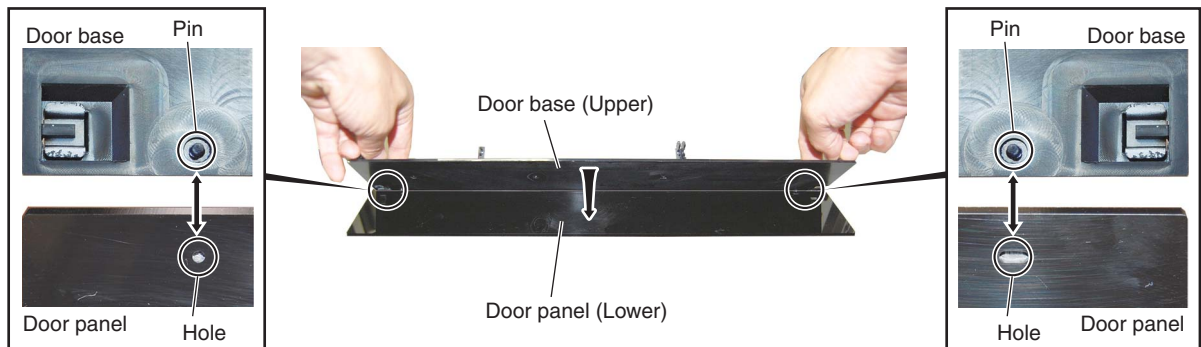
■

- ③ Peel off the separator of double-back tape on the door panel.
Do NOT peel off the protective film on the exterior surface of the door panel in this step.
Peel it off after all the reassembly procedures are completed.

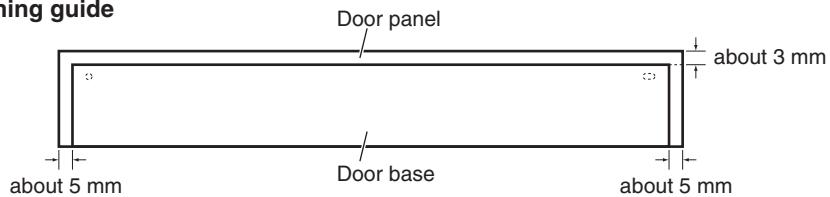
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- ④ Align the two positioning pins of the door base with the holes in the door panel.
When positioning, leave gaps between the door panel and door base, as shown in the figure below:



Positioning guide



- ⑤ Stick the door base and door panel together, by pressing them all over.
- ⑥ Attach the two door cushions.

Service Manual

ORDER NO.
ARP3519

MEDIA RECEIVER

KRP-M01

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-M01	LFTXJ	AC 110 V to 240 V	
KRP-M01	WAXJ5	AC 220 V to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
KRP-M01	ARP3508	BLOCK DIAGRAM, ADJUSTMENT, etc.

For SPECIFICATIONS and PANEL FACILITIES, refer to the operating instructions.

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1. BASIC ITEMS FOR SERVICE

1.1 QUICK REFERENCE

Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "5. DISASSEMBLY".

② Attaching screws for the HDMI and system cable terminals

When attaching the HDMI and system cable terminals after replacing the Assembly, secure the terminals manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD		SD		
No. of LEDs flashing	MR	Panel	No. of LEDs flashing	MR
Red 1	MR_POWER	SQ_LSI	Blue 1	
	Panel	Module Device communication	Blue 2	
Red 2	POWER	DIGITAL-RST2	Blue 3	
Red 3	SCAN	Panel temperature	Blue 4	
Red 4	SCN-5V	Audio	Blue 5	Audio (MSP)
Red 6	Y-DCDC	Module microcomputer communication	Blue 6	
Red 7	Y-SUS		Blue 7	Main 3-wire serial communication
Red 8	ADRS		Blue 8	Main IIC communication
Red 10	X-DCDC	Panel main IIC communication	Blue 9	Main microcomputer communication
Red 11	X-SUS		Blue 10	FAN
Red 12	DIG-DCDC	FAN	Blue 11	Unit high temperature
Red 15	UNKNOWN	Unit high temperature	Blue 12	D-TUNER communication
			Blue 13	RST2/RST4
		DC-IN	Blue 15	Main EEPROM
		Panel main EEPROM		

Special LED Patterns		Subcategory confirmation procedure	
Panel	MR	SD	SD Subcategory
PD (2-15)	B R	PD (1)	B R
SD (1-15)	B R	SD (7-15)	B R
System failure	B R	Standalone operation (MRMS01)	B R
MR on standby (Red LED lit)	B R	Rewriting of software (PC)	B R
Rewriting of software (PC)	B R	Rewriting of software (USB)	B R
NO	B R	After rewriting is completed successfully, the orange LED goes dark.	
BACKUP	B R	Rewriting of software failed (USB)	B R
For special patterns other than described here, see 3.1[1].			
Commands for shifting between standalone and system operations			
Panel	MR		
To Standalone operation: SYSS00	To Standalone operation: MRMS01		
To System operation: SYSS01	To System operation: MRMS00		
Note: After issuing a command, unplug then again plug in the AC power cord.			

If the DISPLAY key is pressed during shutdown, the orange LED flashes. (MR only)

Other SD main categories have subcategories. For details, see 3.3 [2].

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] two times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)

② MR section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] three times.)

③ Panel main section

Select {PANEL MAIN FACTORY} then {PM NG INFO}.
After entering Factory mode, press [MUTING] twice, then press [ENTER/SET].

3. How to display the Mask indication

① Mask indication in the panel side

- Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
- Press [ENTER/SET], then select a Mask indication, using [↑] or [↓].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. DIGITAL Assy (Panel): Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
- Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN BLOCK Assy (MR), MAIN Assy (Panel): Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] four times, then press [↓] once.)
- Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit (Panel): Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

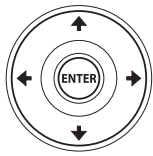
4. Other Assys (Panel): Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Up
↓
Down

- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [↑] or [↓].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER/SET]. To return to the next nested layer above, also press [ENTER/SET].

INFORMATION mode

1. VERSION (1)
2. VERSION (2)
3. VERSION (3)
4. MAIN NG
5. TEMPERATURE
6. HOUR METER
7. HDMI SIGNAL INFO 1
8. HDMI SIGNAL INFO 2
9. VDEC SIGNAL INFO 1
10. VDEC SIGNAL INFO 2



INITIALIZE mode

1. SIDE MASK LEVEL
2. FINAL SETUP
3. Wide XGA AUTO
4. AUTO ADJUSTMENT



OPTION mode

1. CH PRESET
2. AFT
3. SYNC DET
4. CTI



PANEL MAIN FACTORY mode

1. PM NG INFO
2. PM STATE INFO
3. DP_RX INFO
4. PM_SETUP



PANEL FACTORY mode

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL FUNCTION
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP



Structure of Layers in Service Factory Mode

INFORMATION mode

- 1. VERSION (1)
- 2. VERSION (2)
- 3. VERSION (3)
- 4. MAIN NG
 - 4-1. CLEAR
- 5. TEMPERATURE
- 6. HOUR METER
- 7. HDMI SIGNAL INFO 1
- 8. HDMI SIGNAL INFO 2
- 9. VDEC SIGNAL INFO 1
- 10. VDEC SIGNAL INFO 2

The software versions for each microcomputer
The Flash memory versions for each device
The software versions for display microcomputer
The shutdown message ID/event times
(Going Clear mode by [ENTER/SET] key)
Select Yes by [→] key → pushing and hold [ENTER/SET] key
The temperature/FAN rotating status
The HOUR METER/P-COUNT information
The information of HDMI information files
The information of HDMI information files
The signal information of VDEC
The signal information of VDEC

PANEL FACTORY mode

Refer to [PANEL FACTORY MODE]

PANEL MAIN FACTORY mode

- 1. PM NG INFO
- 2. PM STATE INFO
- 3. DP_RX INFO
- 4. PM_SETUP

Shutdown history of the panel main
The temperature/FAN rotating status/Room Light Sensor
Indication of the DPRx ID
Select the bezel color and clear the shutdown history of the panel main

OPTION mode

- 1. CH PRESET
- 2. AFT
- 3. SYNC DET
- 4. CTI

For production line use
For production line use
For technical analysis
For technical analysis

INITIALIZE mode

- 1. SIDE MASK LEVEL
 - 1-1. SIDE MASK LEVEL
- 2. FINAL SETUP
 - 2-1. DATA RESET
- 3. Wide XGA AUTO
- 4. AUTO ADJUSTMENT

For factory use
Set to Factory default settings (it should perform after replacing a MAIN Assy)
For technical analysis

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ (+)
 1. VOL SUS
 2. VOL OFFSET
 -
10. RESET1ST_KSB
 -
25. SUS FREQ
6. PANEL-2 ADJ (+)
 1. R-HIGH
 2. G-HIGH
 -
 6. B-LOW
 7. ABL
7. PANEL FUNCTION (+)
 1. R-LEVEL
 -

Version indication of the panel
Indications of the accumulated power-on time and power-on count of the panel
Indication of the Power-down history
Indication of the Shutdown history

Settings required after replacement of the panel

Items for factory use

For AM noise prevention (Depending on the mode, brightness of the screen changes.)
For confirmation of the result of the setting change, the unit must be turned off then back on again.

For the WB adjustment of the panel and ABL adjustment.
A setting table is available for each signal frequency.

Items for factory use

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

8. ETC (+)
 1. BACKUP DATA
 2. DIGITAL EEPROM
 3. PD INFO
 4. SD INFO
 5. HR-MTR INFO
 6. PM/B1-B5
 7. P COUNT INFO
 8. MAX TEMP
 9. MIRROR
 10. CLS
9. RASTER MASK SETUP (+)
 1. MASK OFF
 2. RST MASK 01
 -
10. PATTERN MASK SETUP (+)
 1. MASK OFF
 2. PTN MASK 01
 -
11. COMBI MASK SETUP (+)
 1. MASK OFF
 2. CMB MASK 01
 -

For transferring backup data (after replacement of the DIGITAL Assy)
Change the adjustment status of the DIGITAL Assy.

For clearance of data for the corresponding items.
The clearing method is the same: Select "CLEAR", then hold [ENTER/SET] pressed for at least 5 seconds.

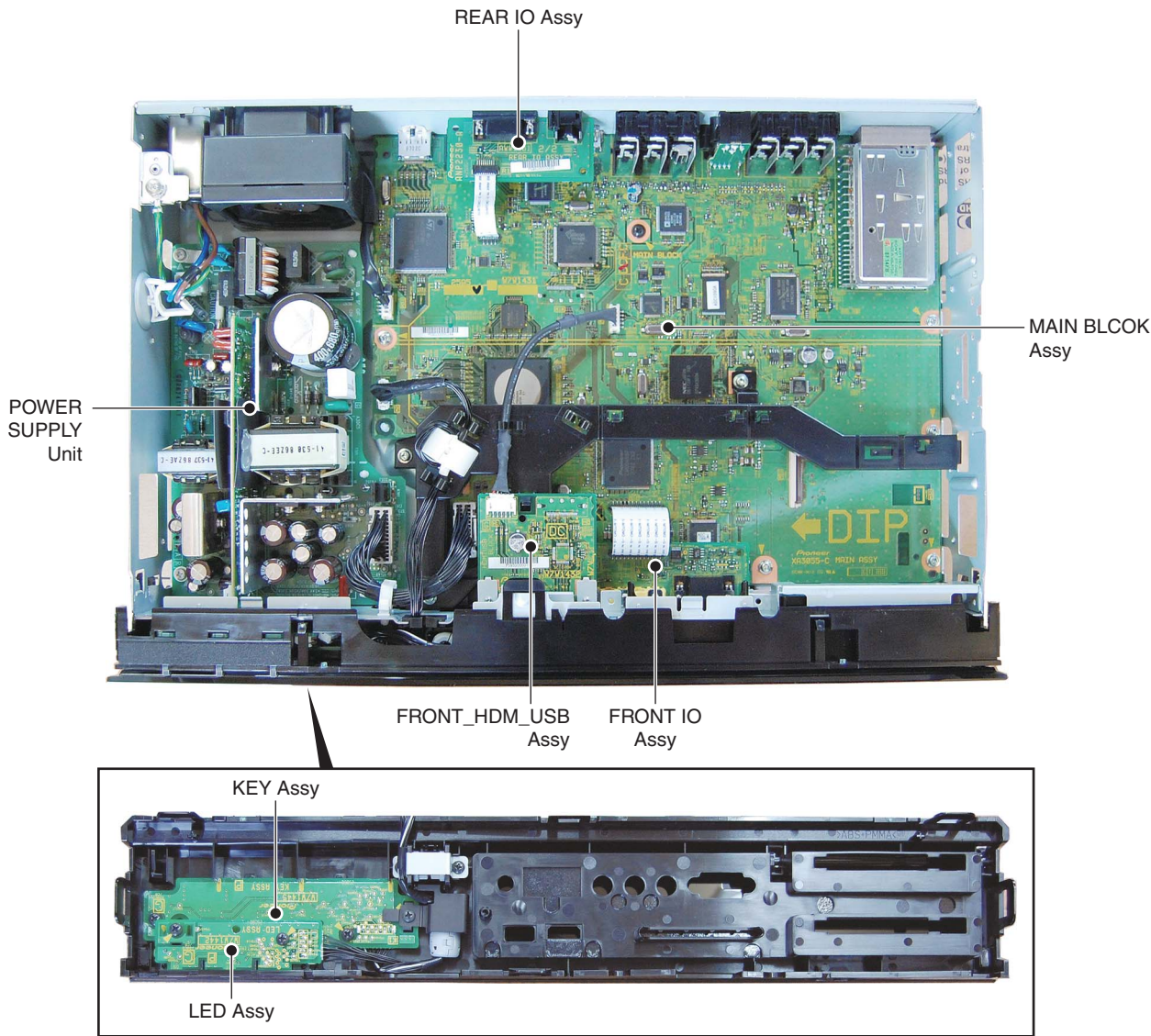
Switch the Mirror display mode.
Switch the function when checking the color sensor level.

For use while the Raster Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Pattern Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Combination Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.



NOTES:

- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Mark No.	Description	Part No.	Mark No.	Description	Part No.
LIST OF ASSEMBLIES					
NSP	1..MAIN ASSY	AWV2595	NSP	1..FUKUGO ASSY	AWV2596
	2..FRONT_HDM_USB ASSY	AWW1432		2..REAR IO ASSY	AWW1461
	2..MAIN BLOCK ASSY	AWW1431		2..LED ASSY	AWW1442
				2..FRONT IO ASSY	AWW1443
				2..KEY ASSY	AWW1445
			⚠	1..POWER SUPPLY UNIT	AXY1223

1234

2. BLOCK DIAGRAM

2.1 OVERALL WIRING DIAGRAM

A

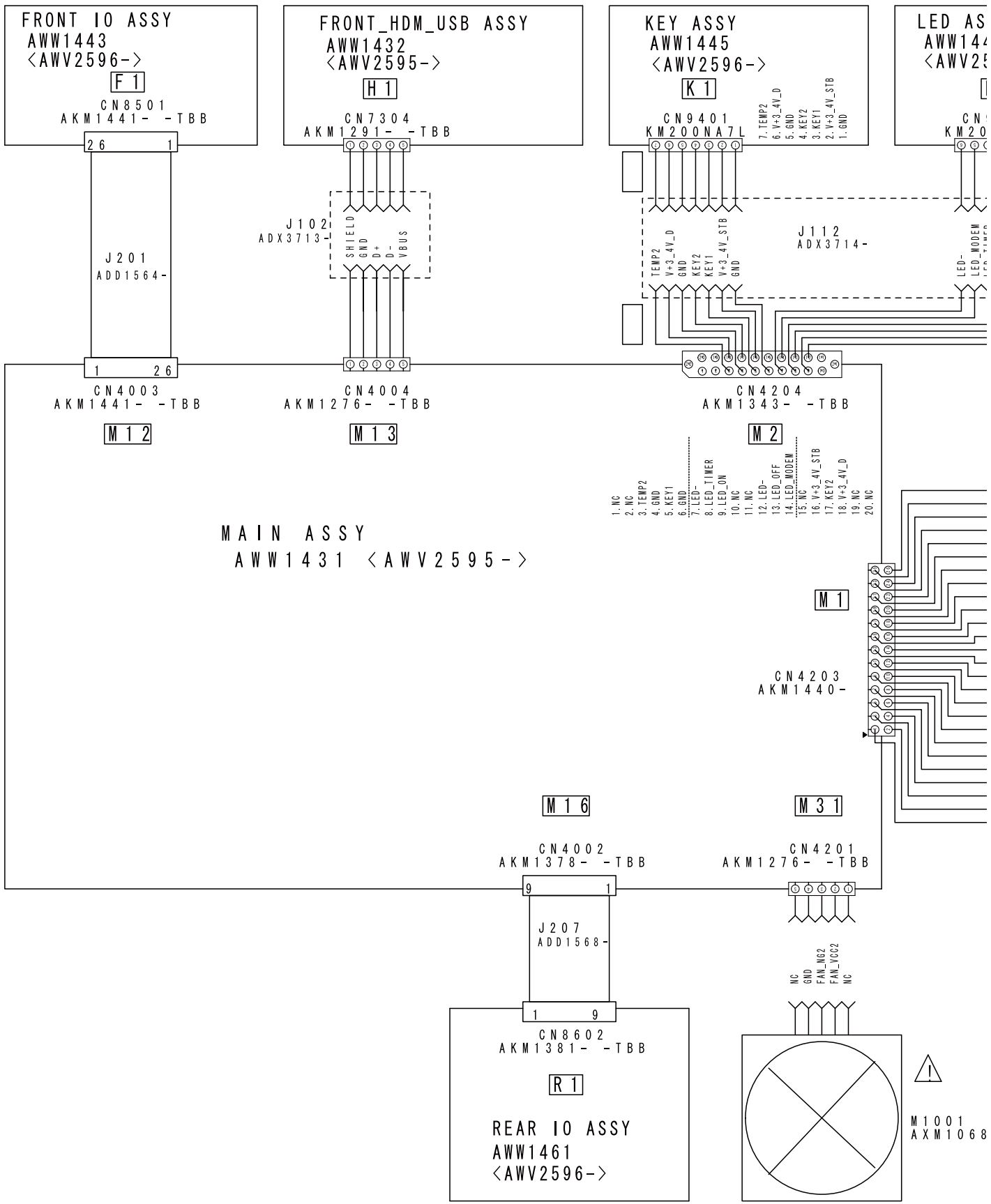
B

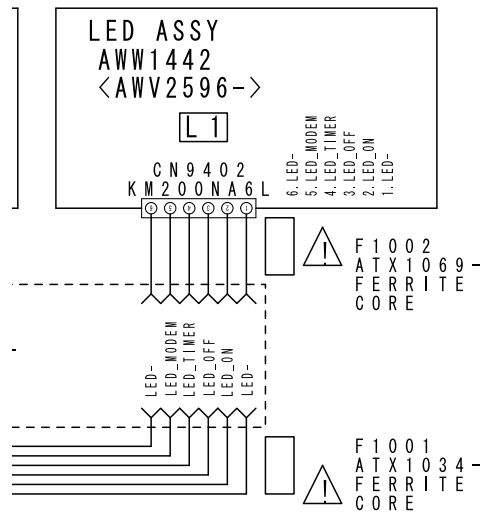
C

D

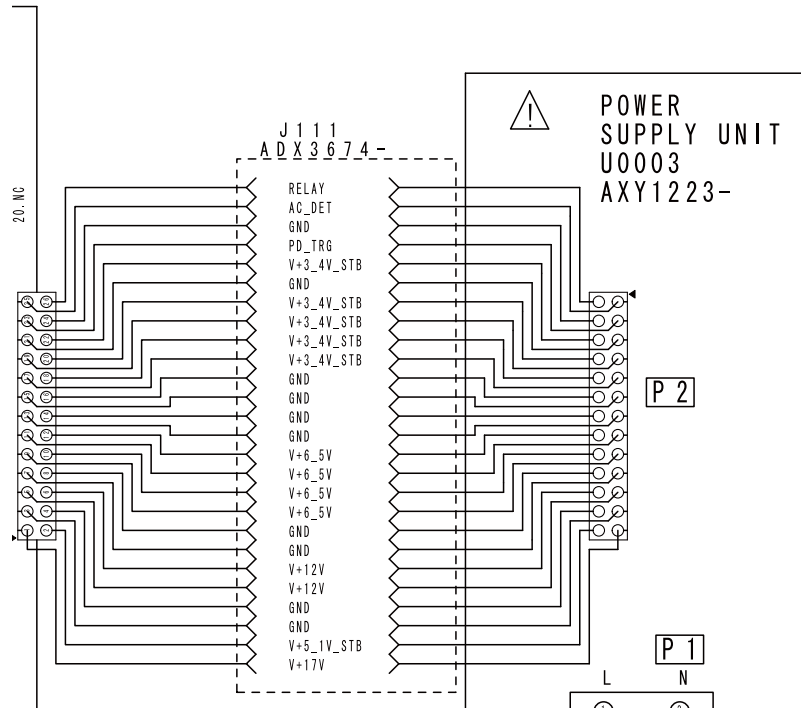
E

F





- When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



CONNECTOR PIN ASSIGN

CN4003 **M12** → CN8501 **F1**

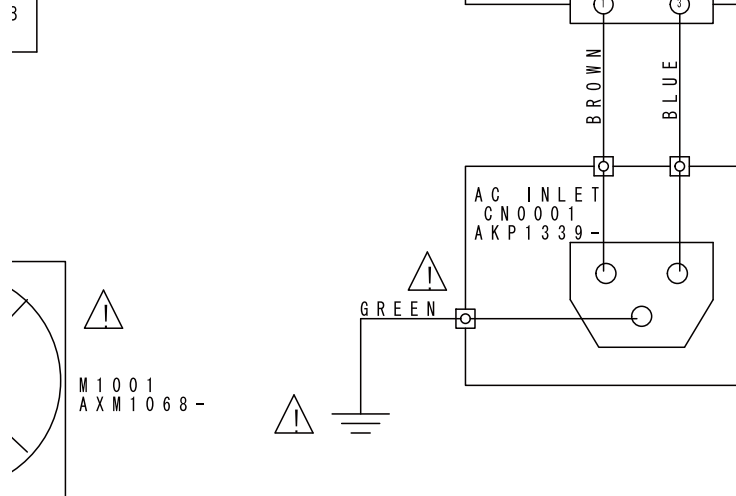
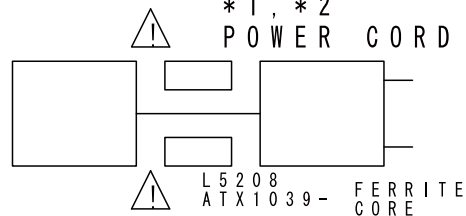
1-26	HP_R	14-13	GND
2-25	GND	15-22	PCB
3-24	HP_L	16-11	GND
4-23	PLUG	17-10	PCB
5-22	GND	18-9	GND
6-21	FRONT_V	19-8	PC_VD
7-20	GND	20-7	GND
8-19	FRONT_L	21-6	GND
9-18	GND	22-5	HP_LED
10-17	GND	23-4	V+5V_IO_FRNT
11-16	FRONT_R	24-3	N.C
12-15	GND	25-2	V+3_4V_STB_FRNT
13-14	PC_R	26-1	

CN4002 **M16** → CN8602 **R1**

1-8	GND
2-7	GND
3-6	CSW SWOFFER
4-5	MD
9-10	CR2
11-12	CR3
13-14	CR4
15-16	CR5
17-18	GND

* 1	KRP-M01/WAXJ5	ADG1209-
* 2	KRP-M01/LFTXJ	ADG1239- (FOR TAIWAN) (Other)

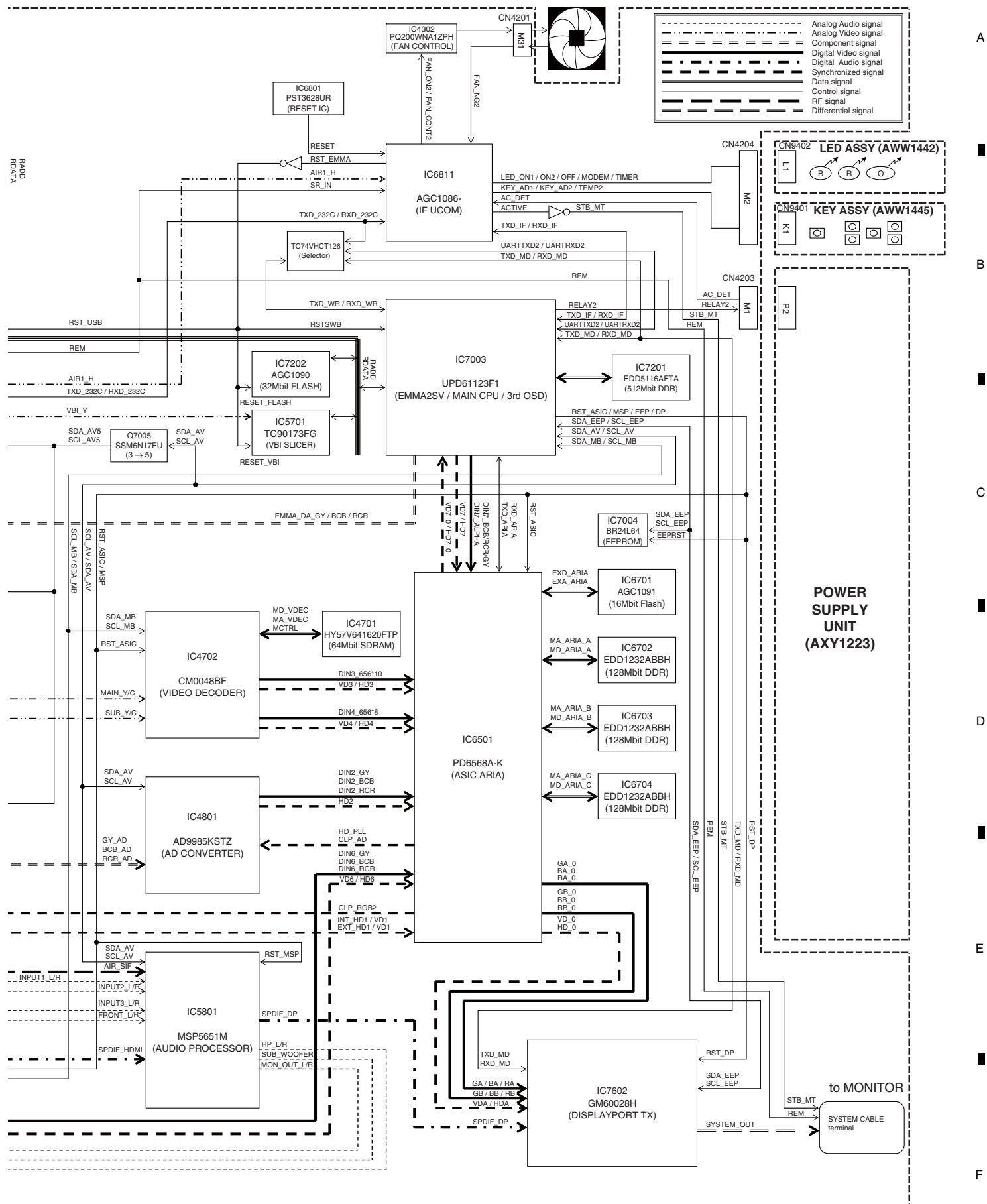
* 1, * 2 POWER CORD



OVERALL DIAGRAM
KRP-M01

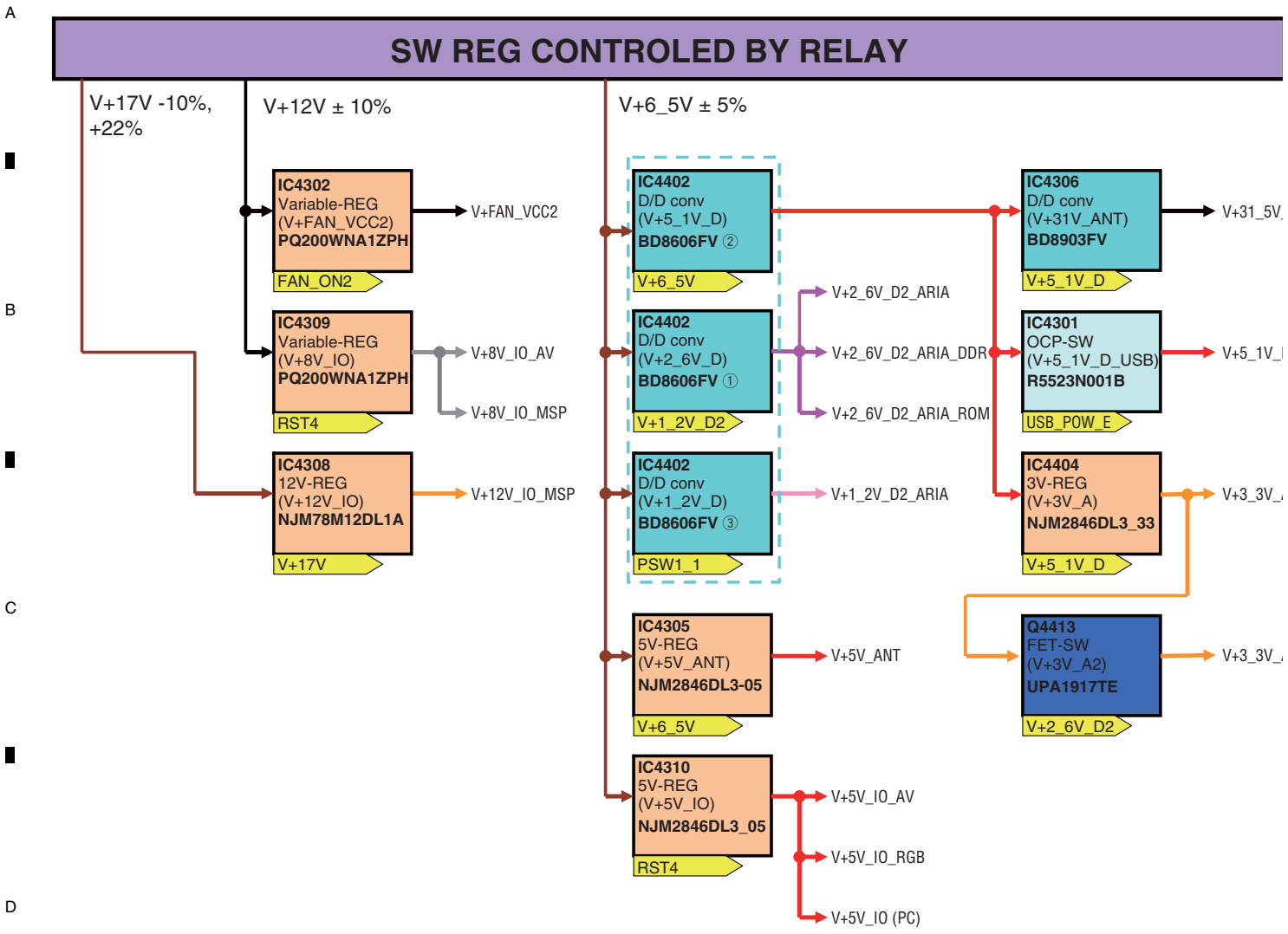
4

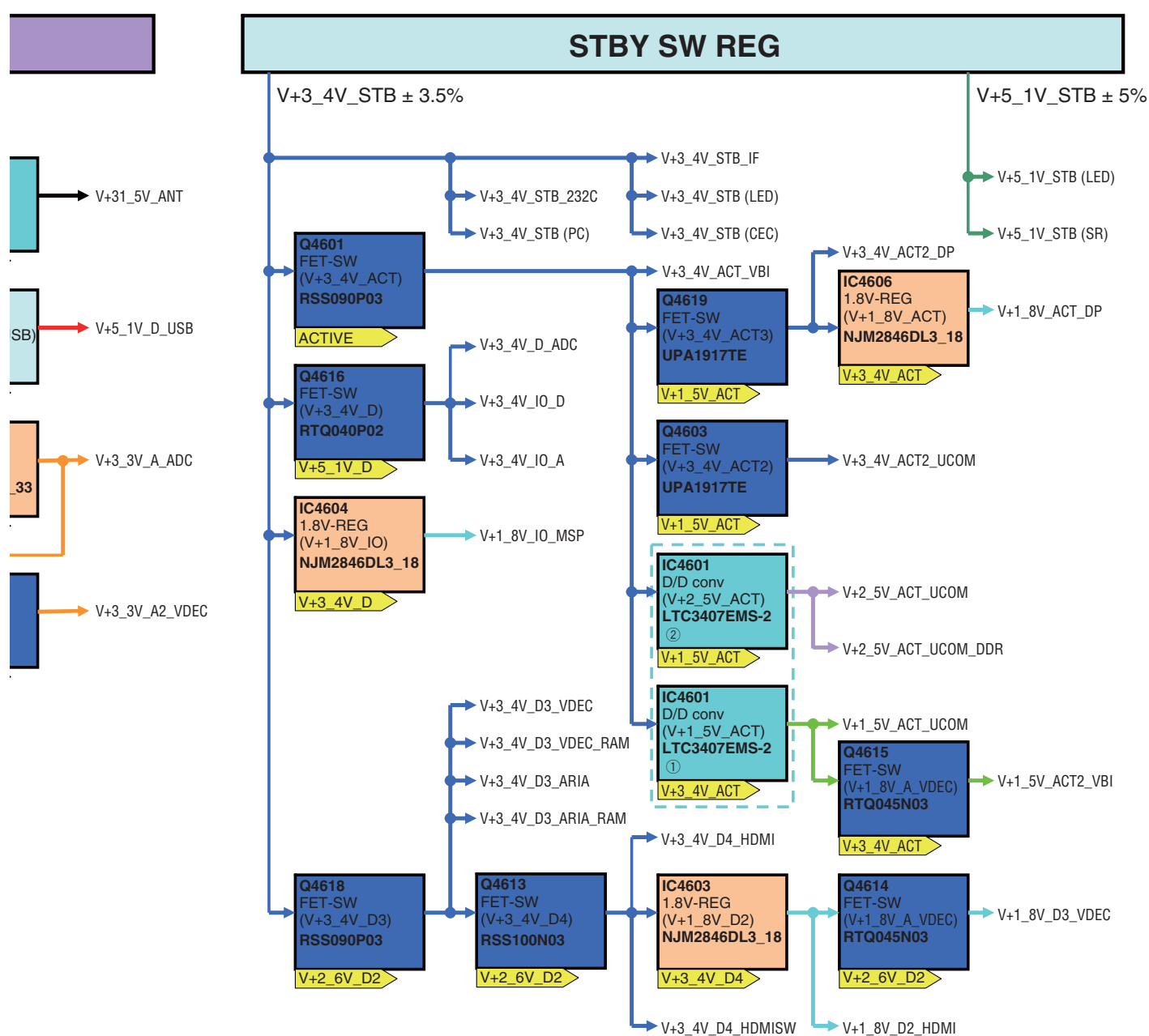




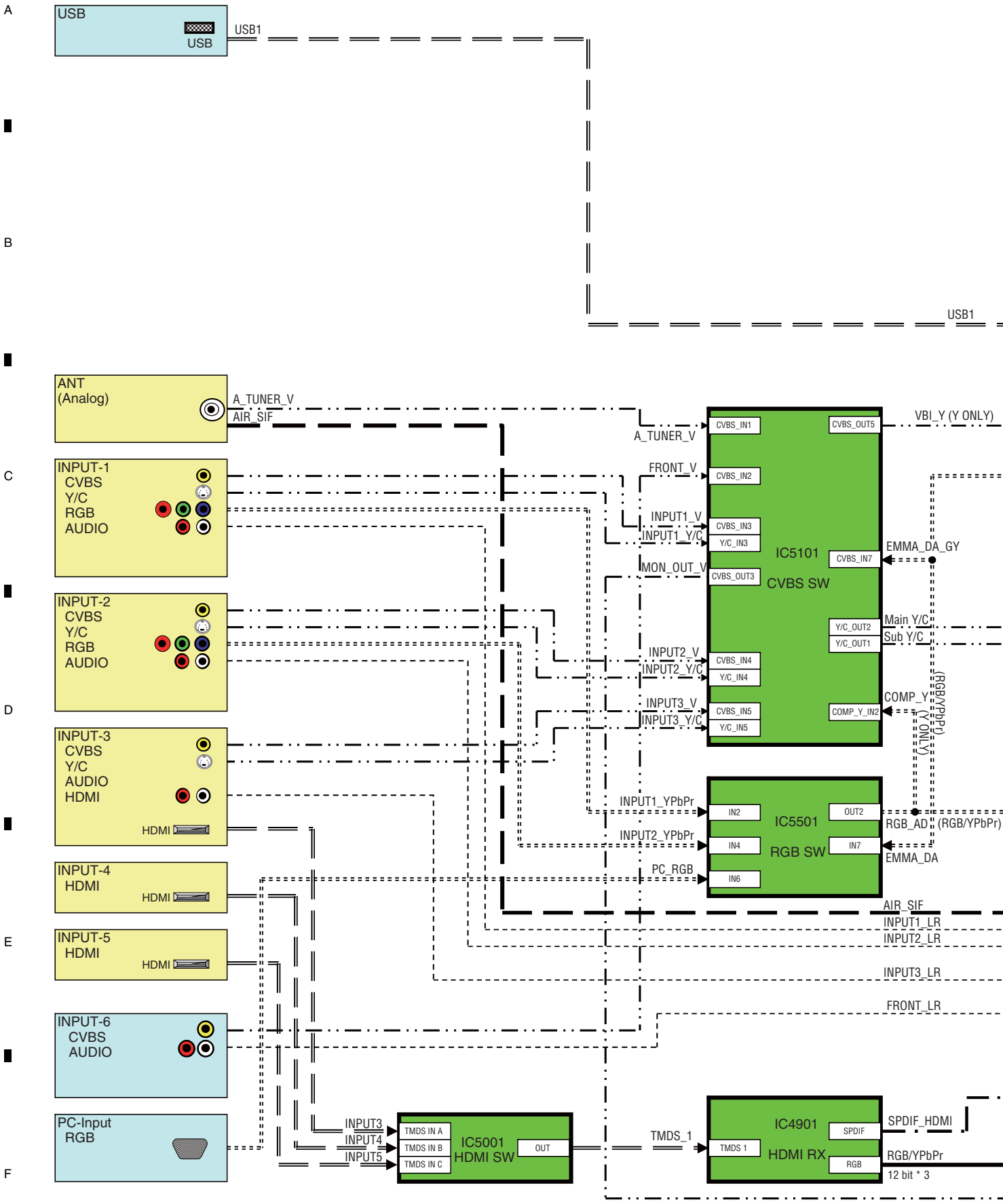
OVERALL DIAGRAM
KRP-M01

2.3 POWER SUPPLY BLOCK of MAIN BLOCK ASSY





2.4 AV BLOCK





A Following item is same as the KRP-M01/WYSIXK5.

OUTLINE OF RS-232C COMMAND

3.1 POWER SUPPLY OPERATION

B Following item is same as the KRP-M01/WYSIXK5.

[2] POWER ON SEQUENCE

C [1] LED DISPLAY INFORMATION

LED Pattern

Status	LED	LED Pattern / Remarks			
Standby Power Management	Blue Red Orange				
Power On	Blue Red Orange				
Power-Down	Blue Red Orange	Once 500ms	Twice	n times 2.5s	Once *1
Shutdown	Blue Red Orange	500ms	Twice	n times 2.5s	Once *2
Shutdown (Subcategory flashing)	Blue Red Orange	500ms	Twice	n times 2.5s	Once *2 *3
No digital adjustment data copied for backup	Blue Red Orange				
Updating the PC	Blue Red Orange				
During factory operation	Blue Red Orange				
Power ON of standalone mode (Screen ON)	Blue Red Orange				
Mode switch of system / standalone operation	Blue Red Orange				
Sleep timer	Blue Red Orange				

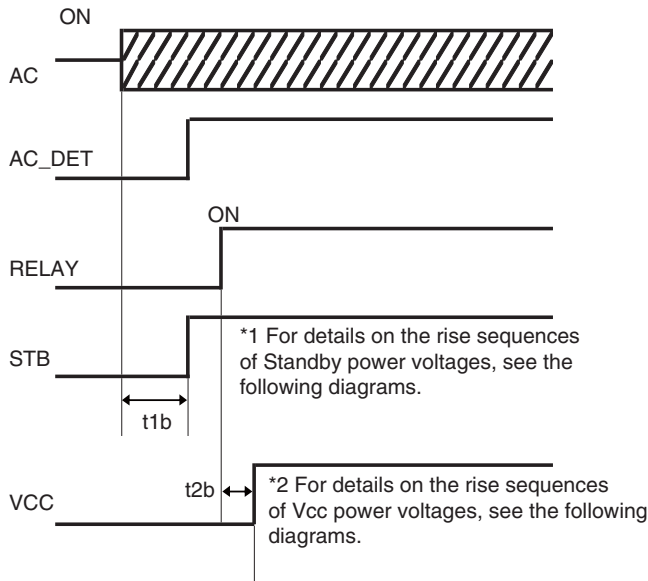


F *1: Notify upon the power-down content by Red LED flashing number of times.
*2: Notify upon the shutdown content by Blue LED flashing number of times.
*3: Notify upon the subcategory number by Orange LED flashing number of times.

[3] DETAILS OF POWER ON SEQUENCE

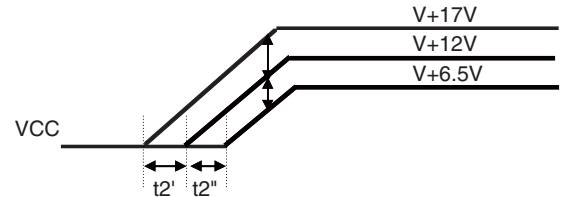
The rise of the output voltage is defined as the point at which 10% output voltage is reached.

1. Sequence of Relay ON (IN)



Relay ON	
Item	Specified Time
AC to STB	$t1b \leq 0.8s$
RELAY to VCC	$t2b \leq 0.5s$

3. Rise sequences of Vcc power voltages



<Specified time of voltages>

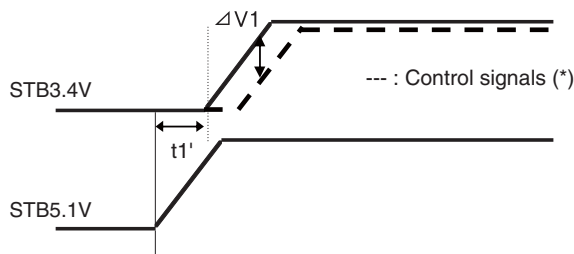
Rise	
Item	Specified time (at nominal load)
V+17V to V+12V	$0ms \leq t2' \leq 10ms$
V+12V to V+6.5V	$0ms \leq t2'' \leq 10ms$

4. Specifications of the rise time of the output voltages (common to all sequences)

Note that there must not be any temporary voltage drop during rising.

Rise time (time required for reaching from 10% to 90% output voltage)	
Item	Specified time
STB 10% to STB 90%	$tr_STB \leq 100ms$
VCC 10% to VCC 90%	$tr_VCC \leq 200ms$

2. Rise sequence of Standby power voltages

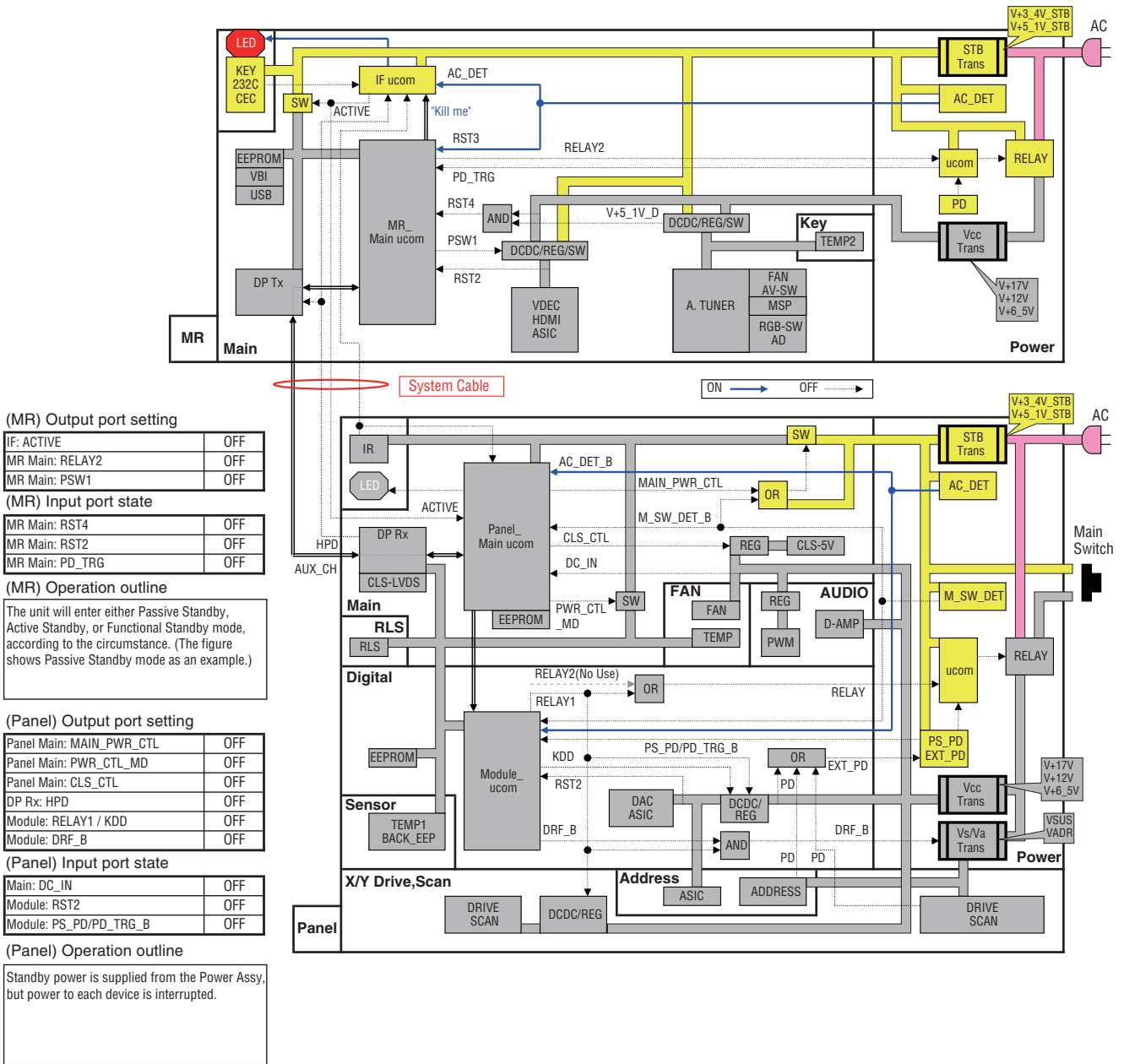


<Specified time and difference of voltages>

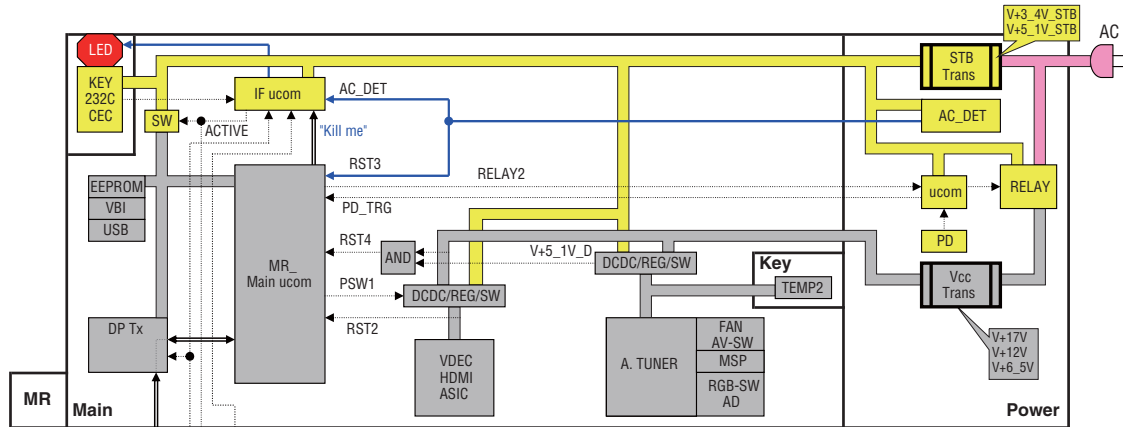
Rise	
Item	Specified Time
STB5.1V to STB3.4V	$-50ms \leq t1' \leq 50ms$
Item	Specified difference of voltages
STB3.4V - Control signal (*)	$0V \leq \Delta V1$

(*) Control signals (output signals) denote AC_DET and PD_TRG signals.

Panel Main Power OFF



Passive Standby



(MR) Output port setting

IF: ACTIVE	OFF
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

Only the periphery of the IF microcomputer are operated.

(Panel) Output port setting

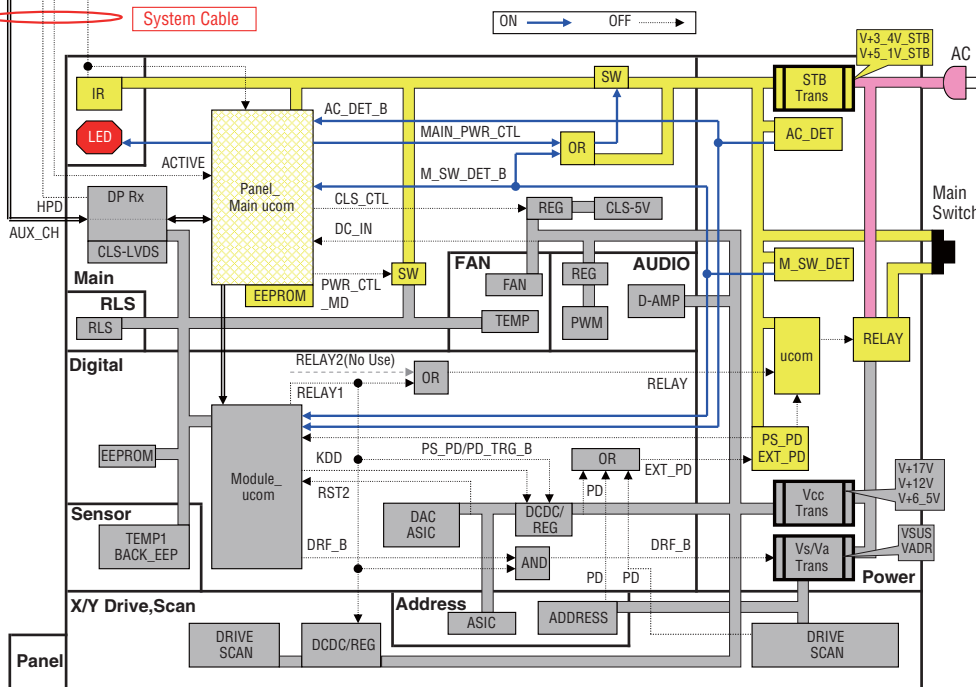
Panel Main: MAIN_PWR_CTL	ON
Panel Main: PWR_CTL_MD	OFF
Panel Main: CLS_CTL	OFF
DP Rx: HPD	OFF
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

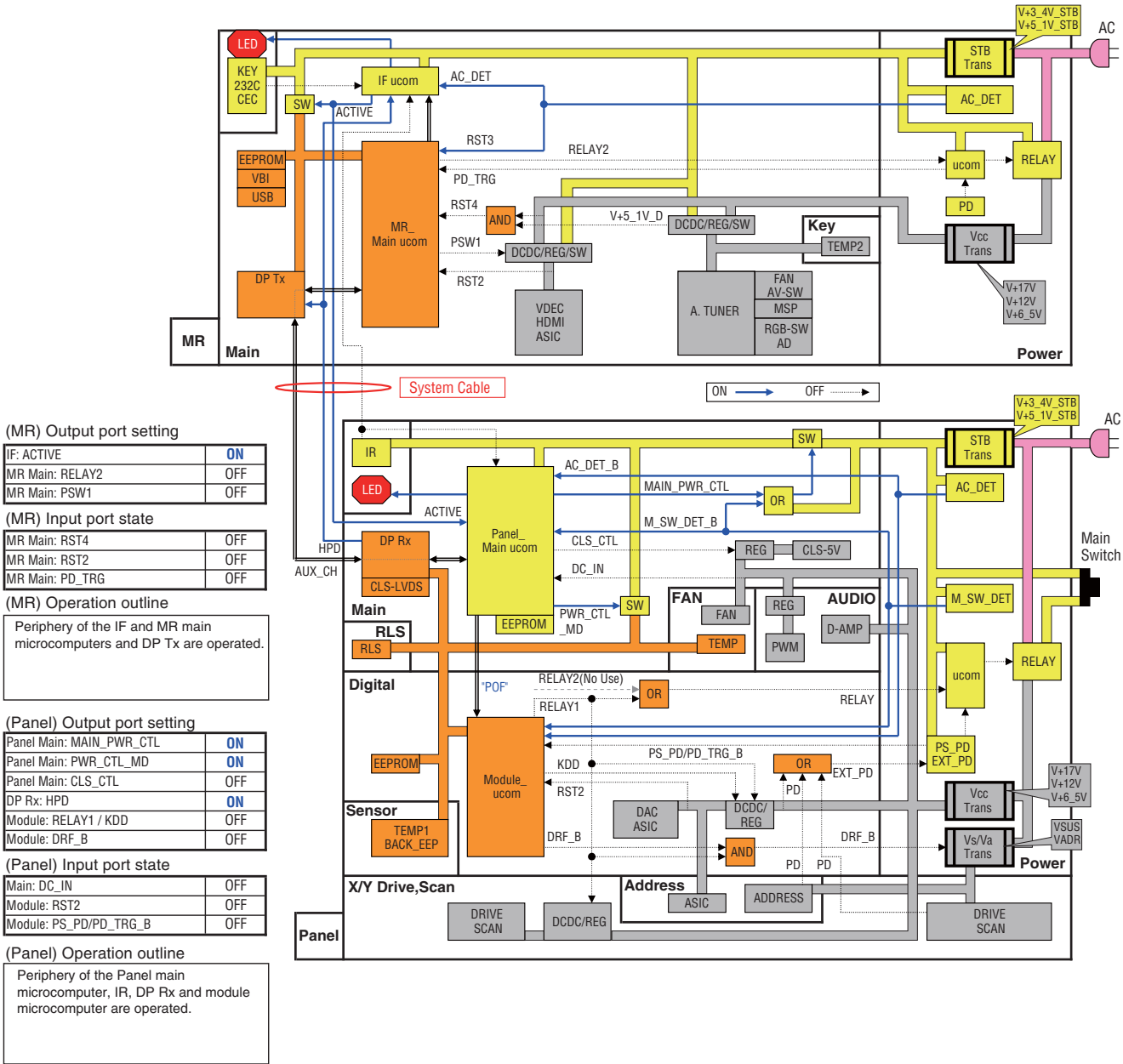
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

(Panel) Operation outline

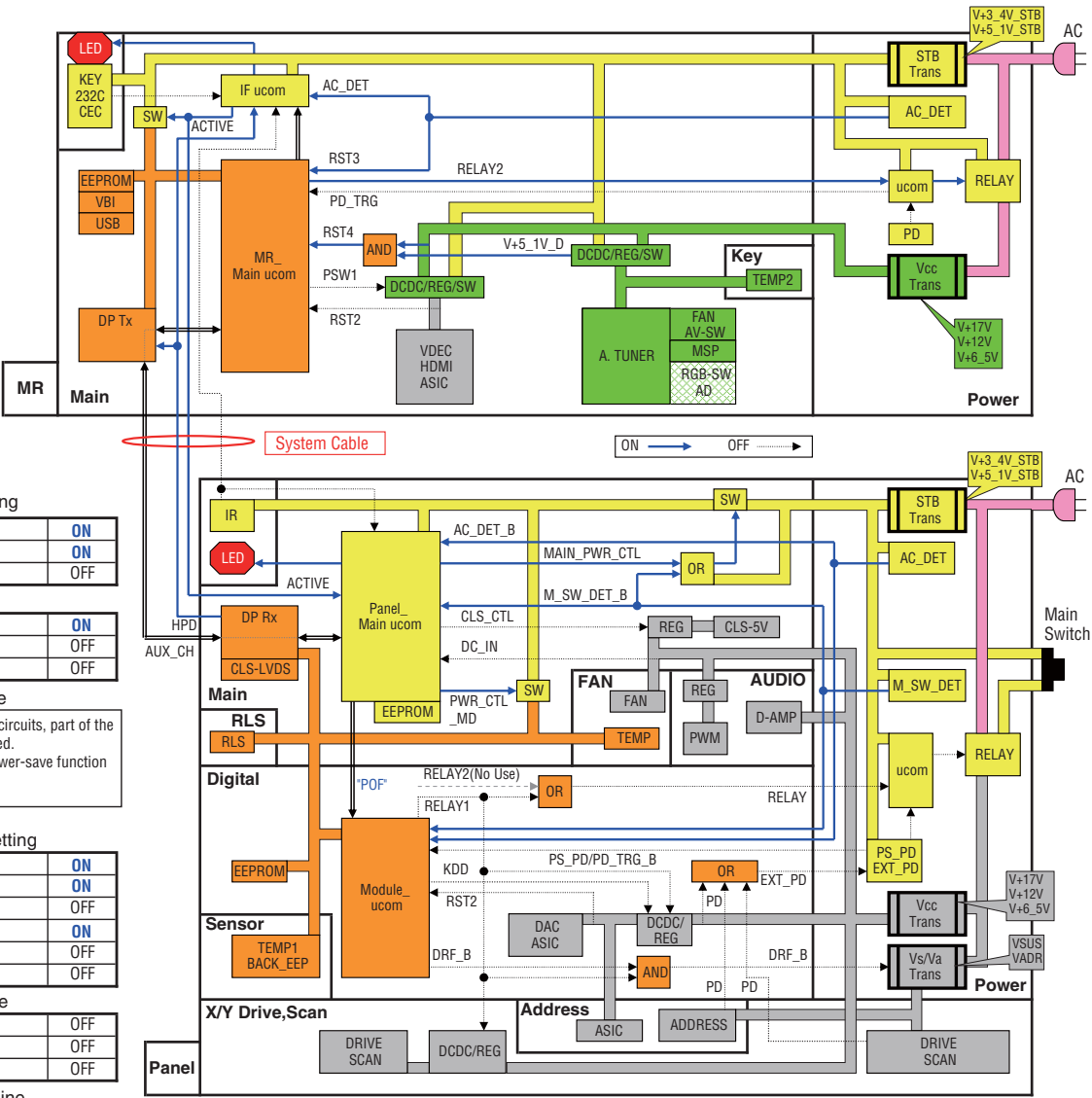
Only the periphery of the Panel main microcomputer and IR are operated. In this time, panel main microcomputer is the sleep mode.



Active Standby



Function Standby



(MR) Output port setting

IF: ACTIVE	ON
MR Main: RELAY2	ON
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	ON
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

- (MR) Operation outline
- Besides the standby power circuits, part of the Vcc circuits are also activated.
 - RGB-SW/AD IC uses the power-save function of the IC.

(Panel) Output port setting

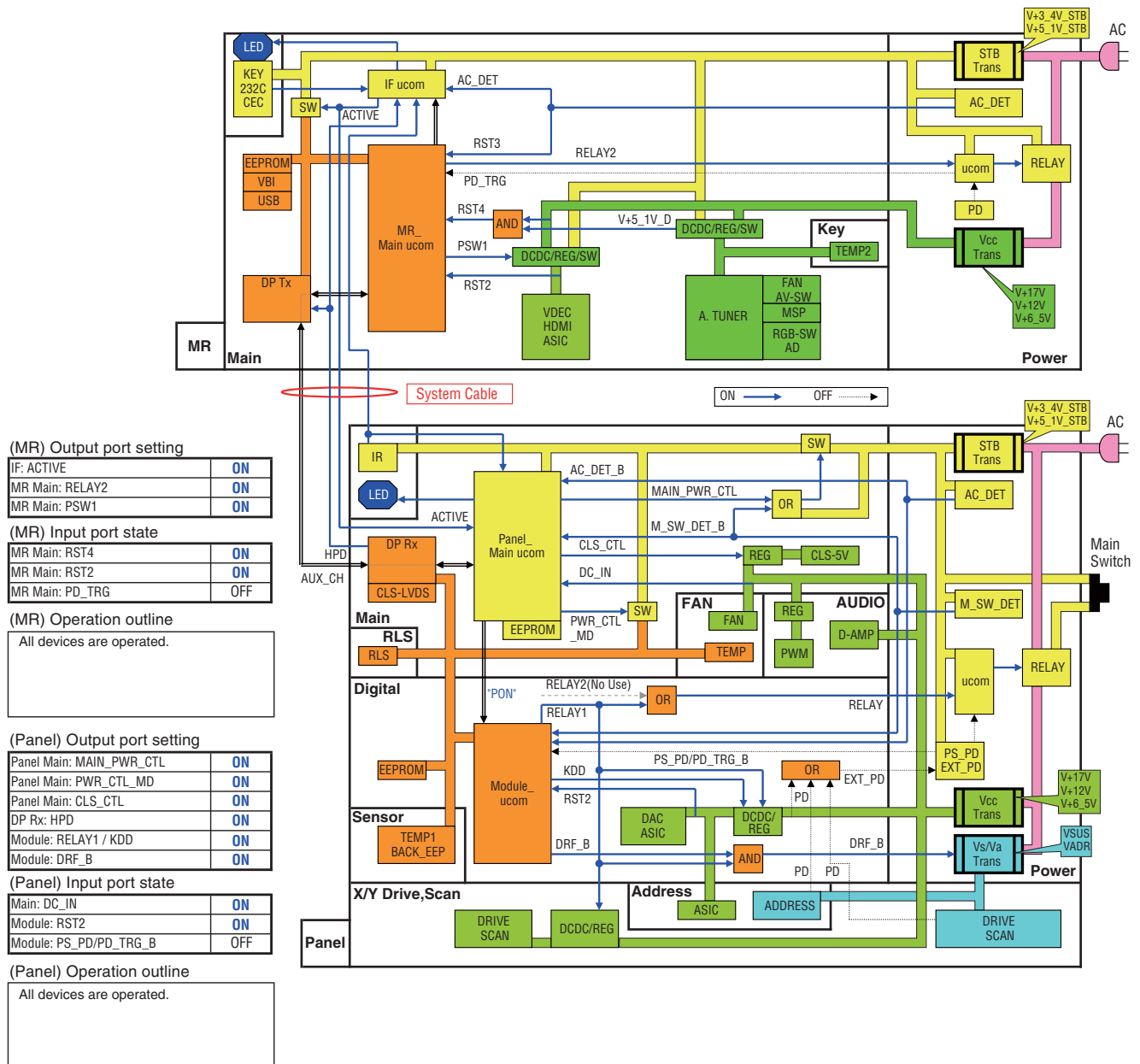
Panel Main: MAIN_PWR_CTL	ON
Panel Main: PWR_CTL_MD	ON
Panel Main: CLS_CTL	OFF
DP Rx: HPD	ON
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

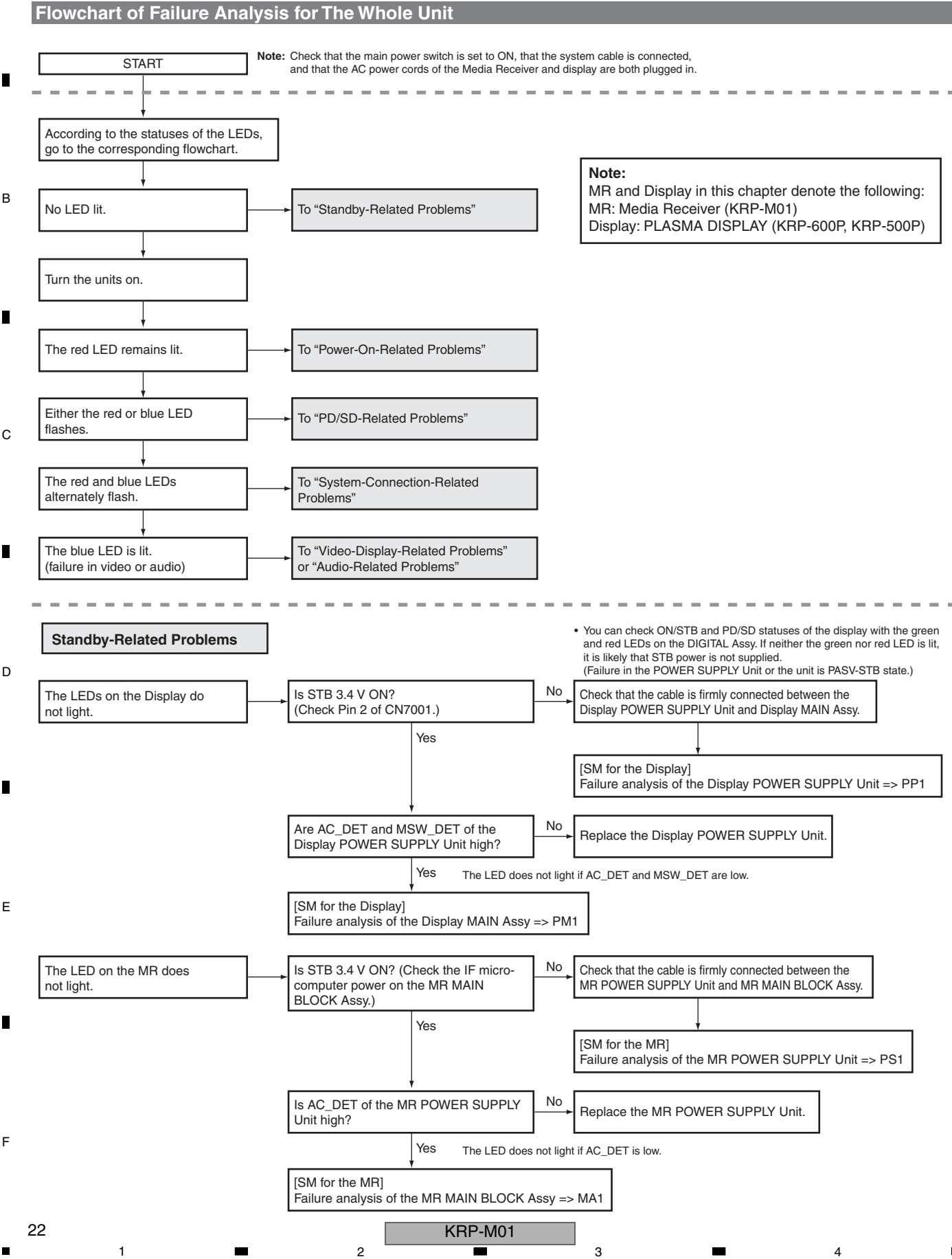
- (Panel) Operation outline
- Periphery of the Panel main microcomputer, IR, DP Rx and module microcomputer are operated.
(As same state as the active standby)

PDP Screen ON

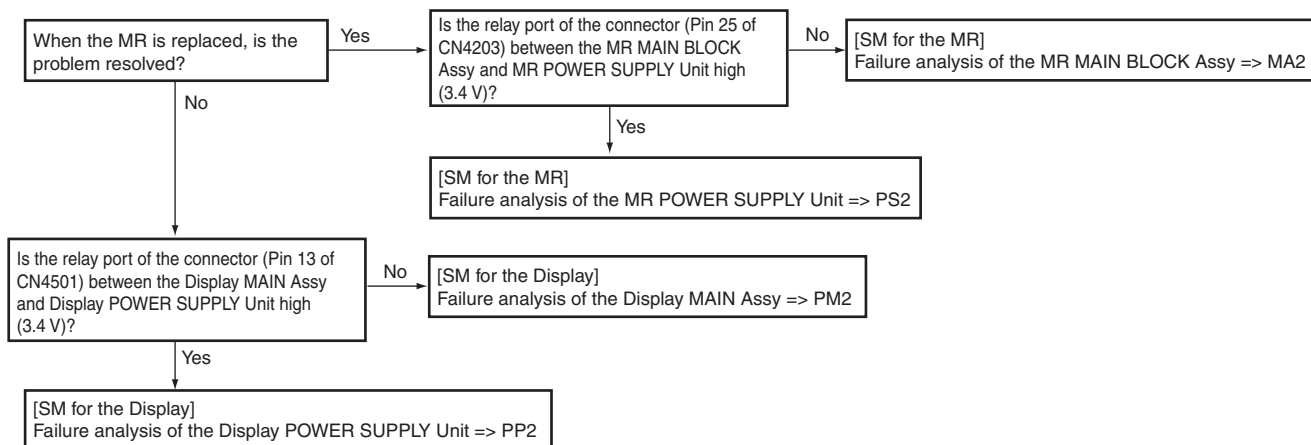


A

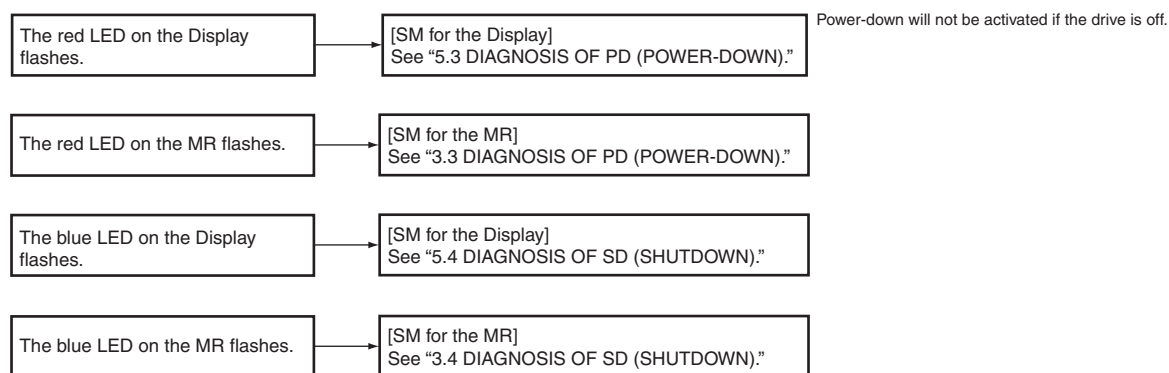
[1] WHOLE UNIT



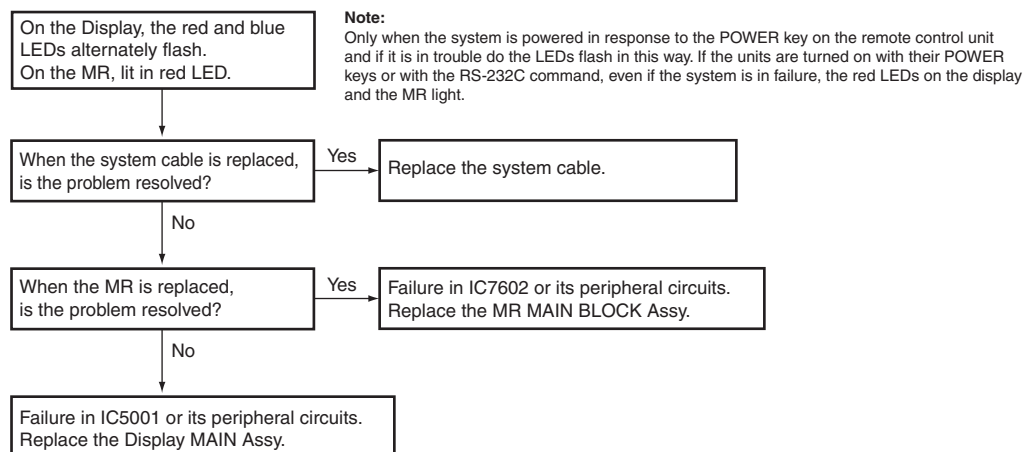
Power-On-Related Problems



PD/SD-Related Problems

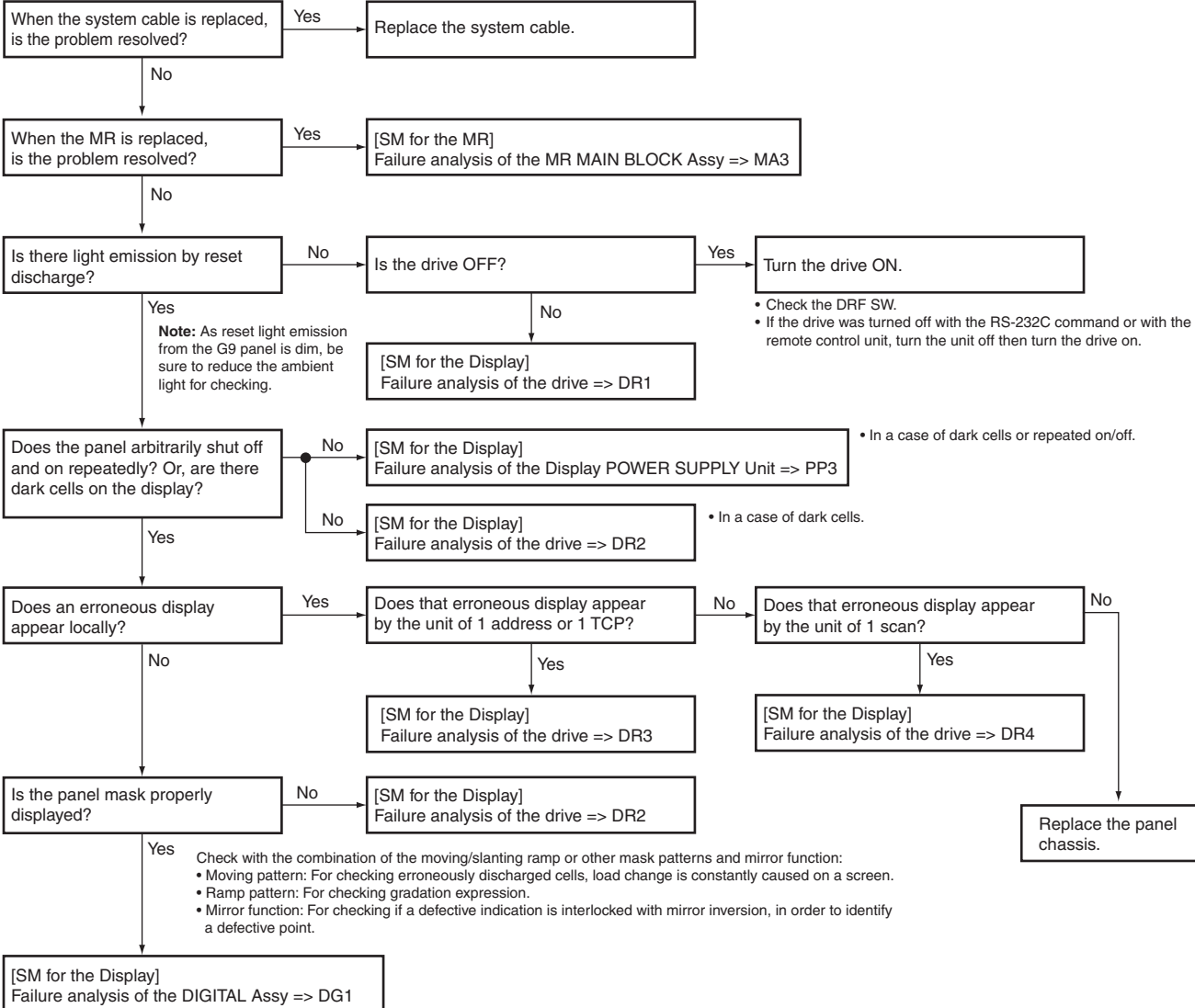


System-Connection-Related Problems



A

Video-Display-Related Problems



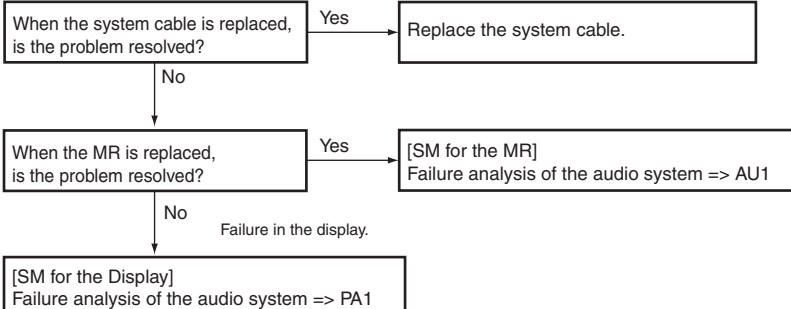
B

C

D

E

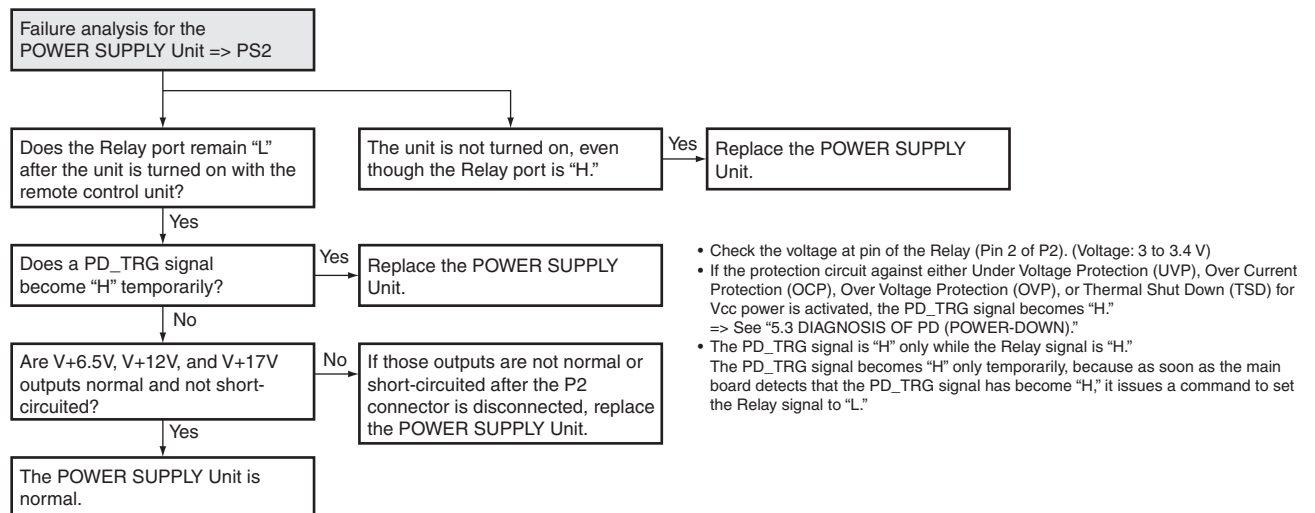
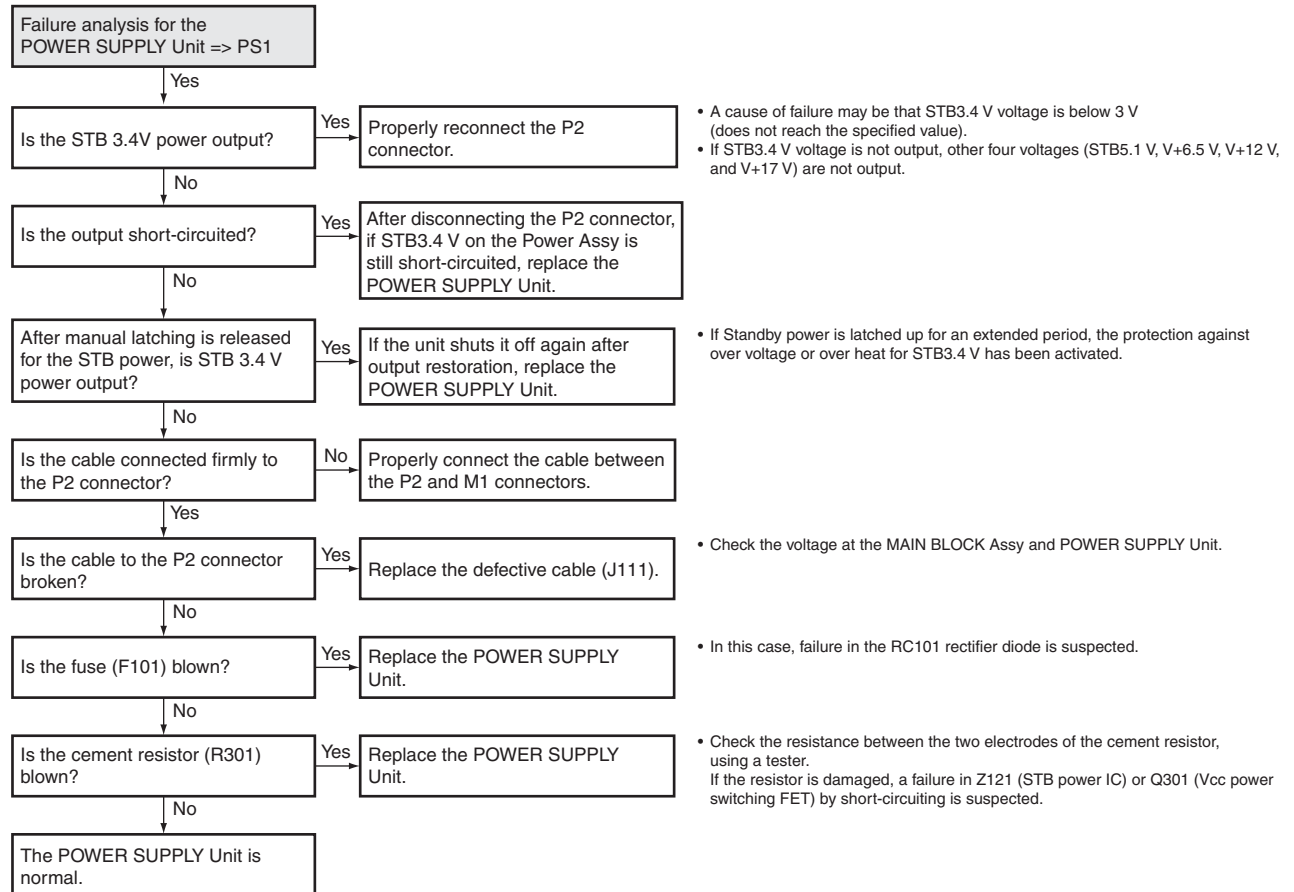
Audio-Related Problems



F

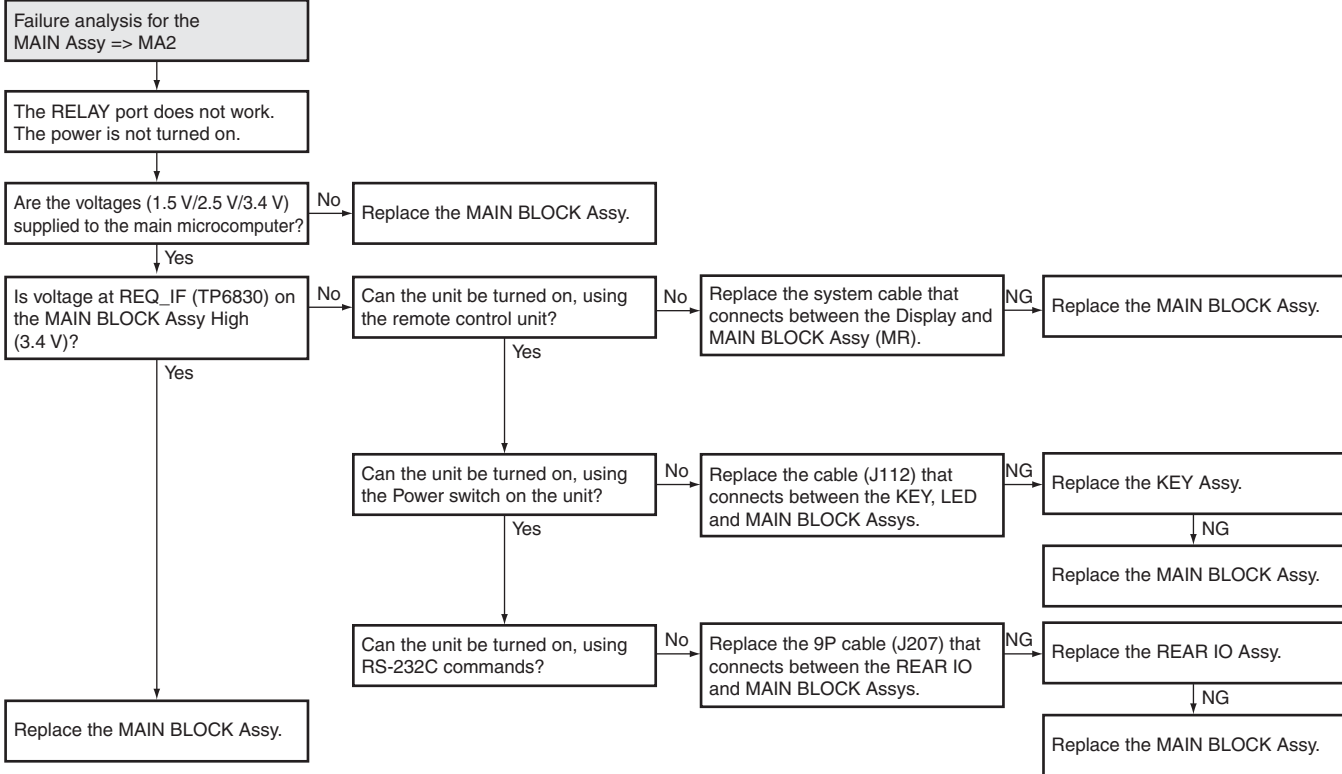
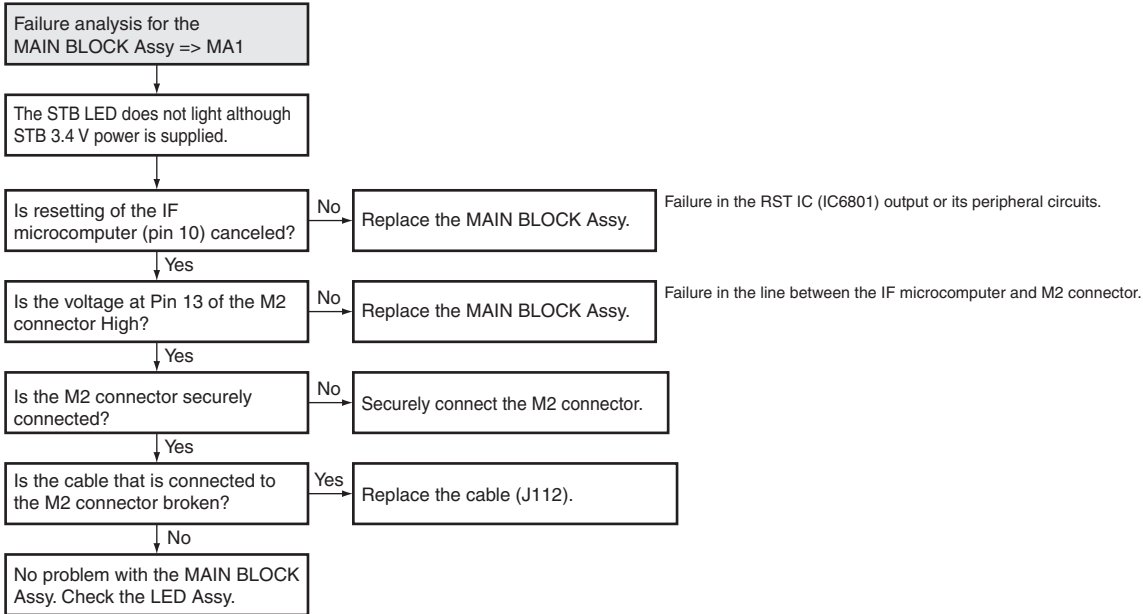
[2] POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit

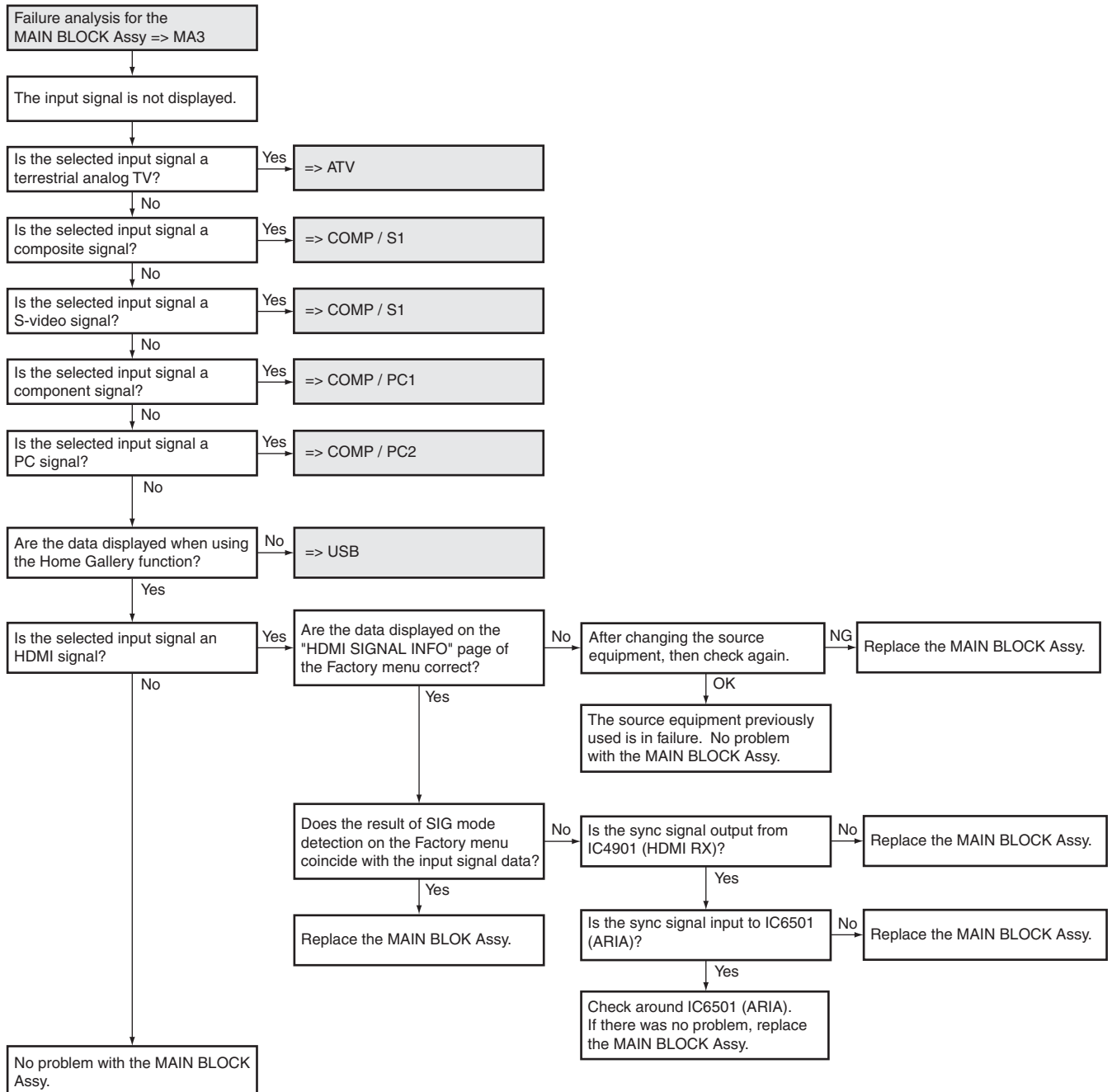


[3] MAIN BLOCK ASSY

Flowchart of Failure Analysis for The MAIN BLOCK Assy

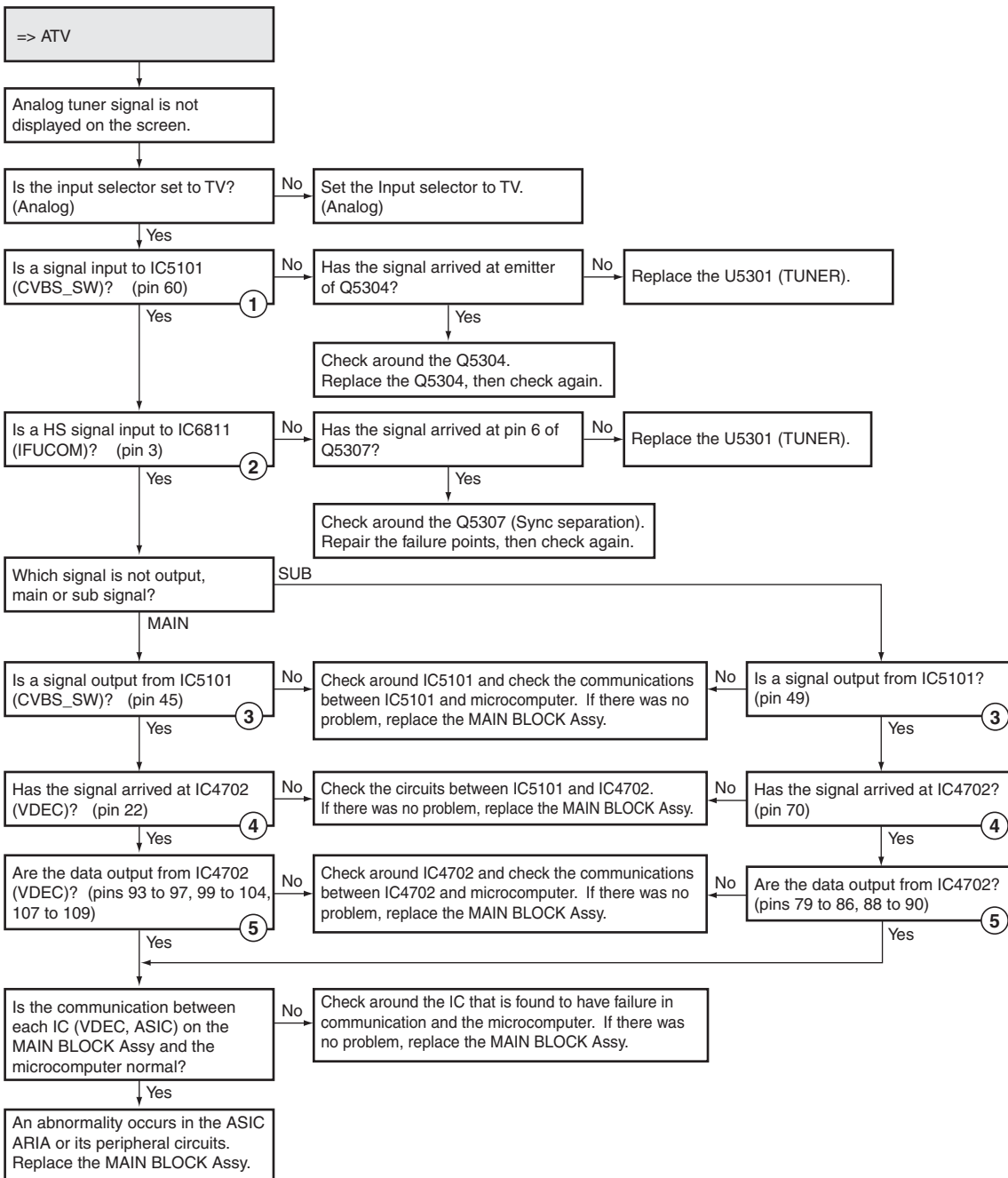


Flowchart of Failure Analysis for The MAIN BLOCK Assy



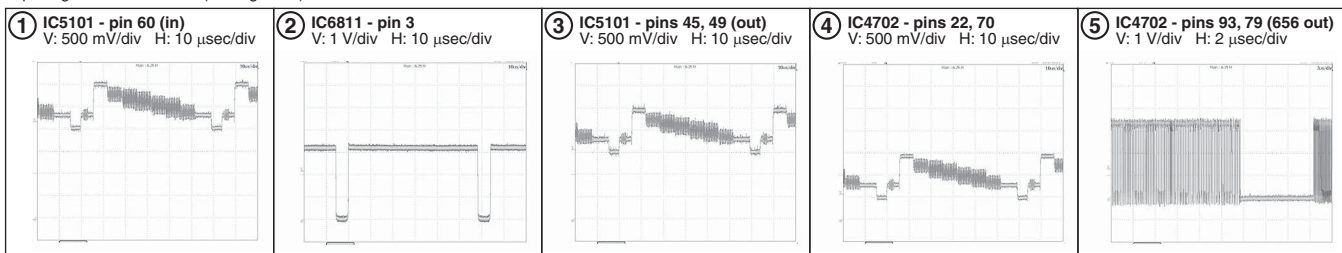
[4] VIDEO SYSTEM

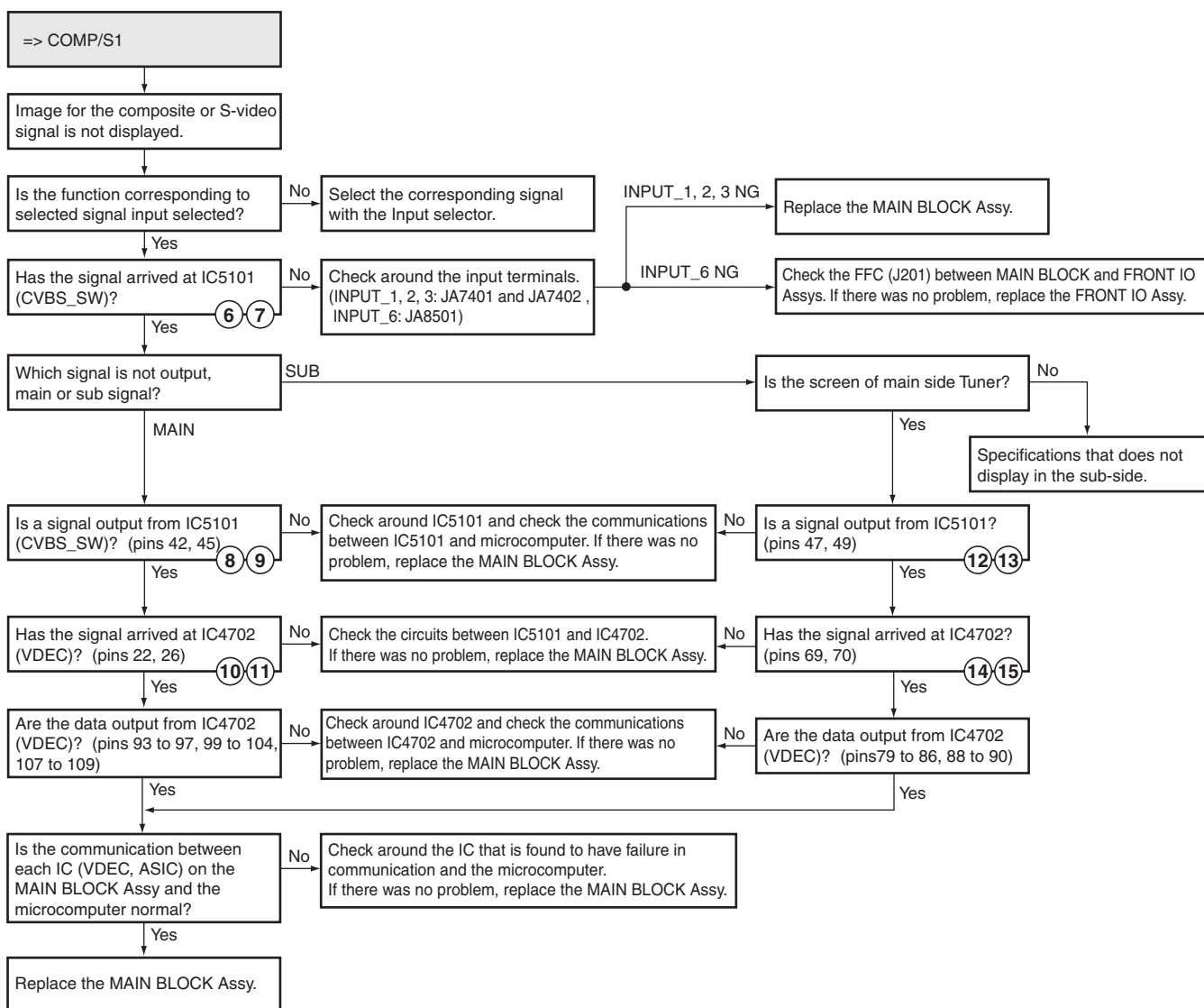
Flowchart of Failure Analysis for The Video System



• Waveforms

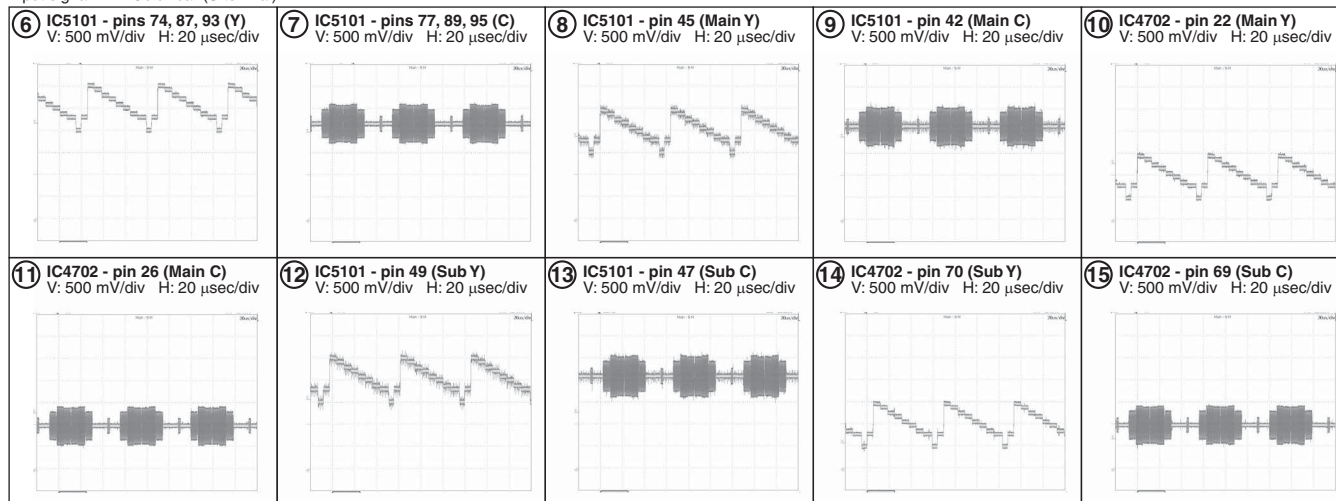
Input signal: PAL Color-bar (Analog tuner)





● Waveforms

Input signal: PAL Color-bar (S terminal)



A

=> COMP/PC1

Image for the component signal is not displayed.

Is the function corresponding to selected signal input selected?

No

Select the corresponding signal with the input selector.

Yes

B

Which signal is not output, main or sub signal?

SUB

Is the screen of main side Tuner?

No

Specifications that does not display in the sub-side.

MAIN

Yes

Has the signal arrived at IC5501 (RGBSW)? (pins 70, 72, 74, 86, 88, 90)

No

Check around a JA7501.

NG

Replace the MAIN BLOCK Assy.

Yes

22 23 24

Is a signal output from IC5501 (RGBSW)? (pins 30, 32, 34)

No

Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

25 26 27

C

Has the signal arrived at IC4801 (ADC)? (pins 43, 48, 54)

No

Check the circuits between IC5501 and IC4801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

28 29 30

Is the communication between each IC (ADC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No

Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

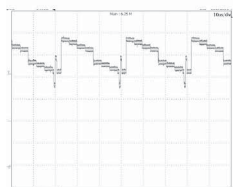
Replace the MAIN BLOCK Assy.

D

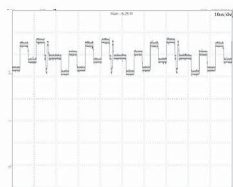
• Waveforms

Input signal: Color-bar (Component 720p/50 Hz)

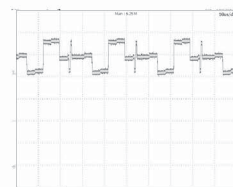
22 IC5501 - pins 70, 86 (Y)
V: 500 mV/div H: 10 μ sec/div



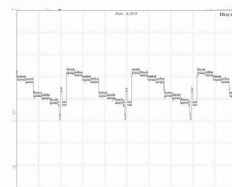
23 IC5501 - pins 72, 88 (Pb)
V: 500 mV/div H: 10 μ sec/div



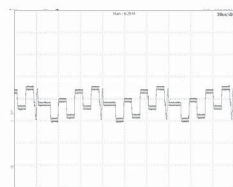
24 IC5501 - pins 74, 90 (Pr)
V: 500 mV/div H: 10 μ sec/div



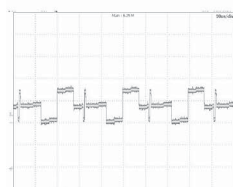
25 IC5501 - pin 34 (Y)
V: 500 mV/div H: 10 μ sec/div



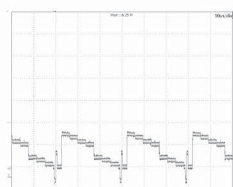
26 IC5501 - pin 32 (Pb)
V: 500 mV/div H: 10 μ sec/div



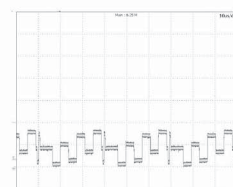
27 IC5501 - pin 30 (Pr)
V: 500 mV/div H: 10 μ sec/div



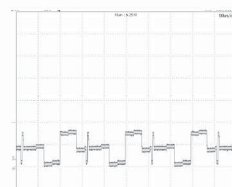
28 IC4801 - pin 48 (Y)
V: 500 mV/div H: 10 μ sec/div



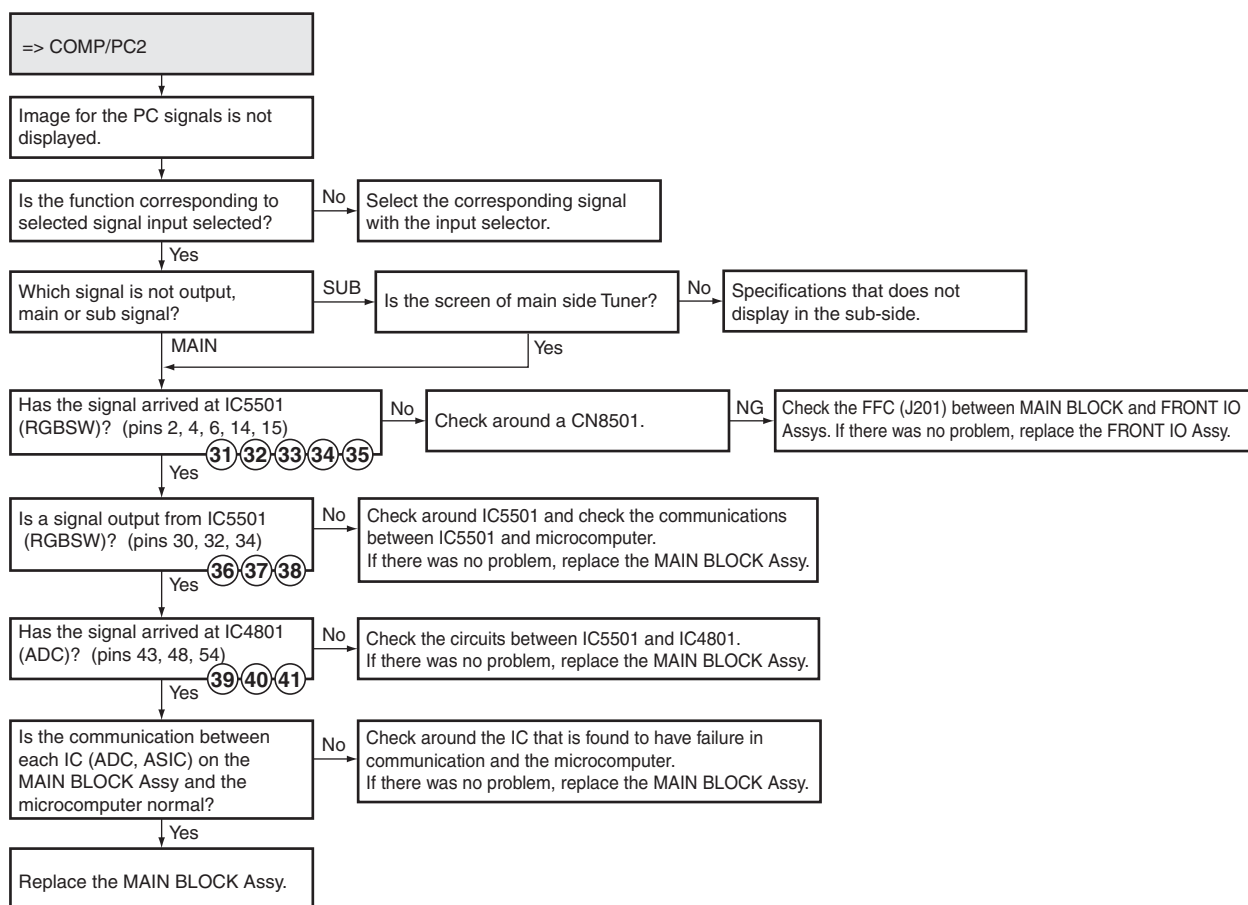
29 IC4801 - pin 43 (Pb)
V: 500 mV/div H: 10 μ sec/div



30 IC4801 - pin 54 (Pr)
V: 500 mV/div H: 10 μ sec/div

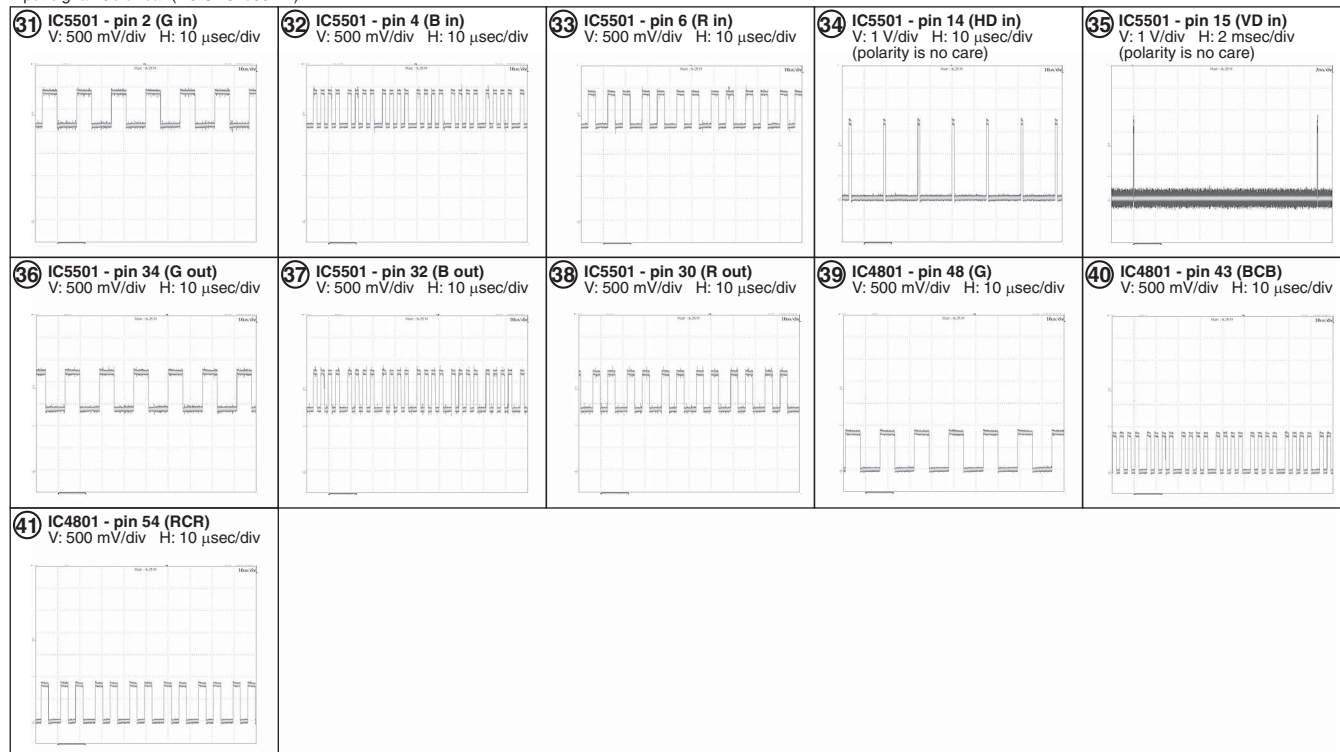


F



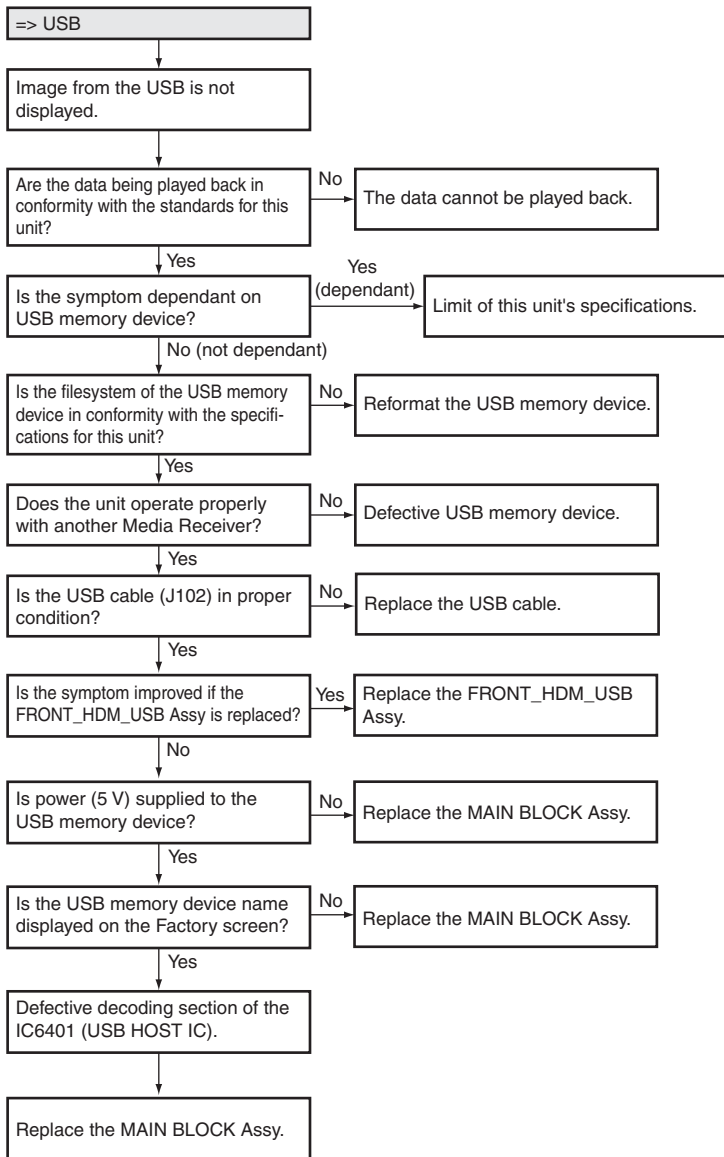
• Waveforms

Input signal: Color-bar (PC SXGA/60 Hz)



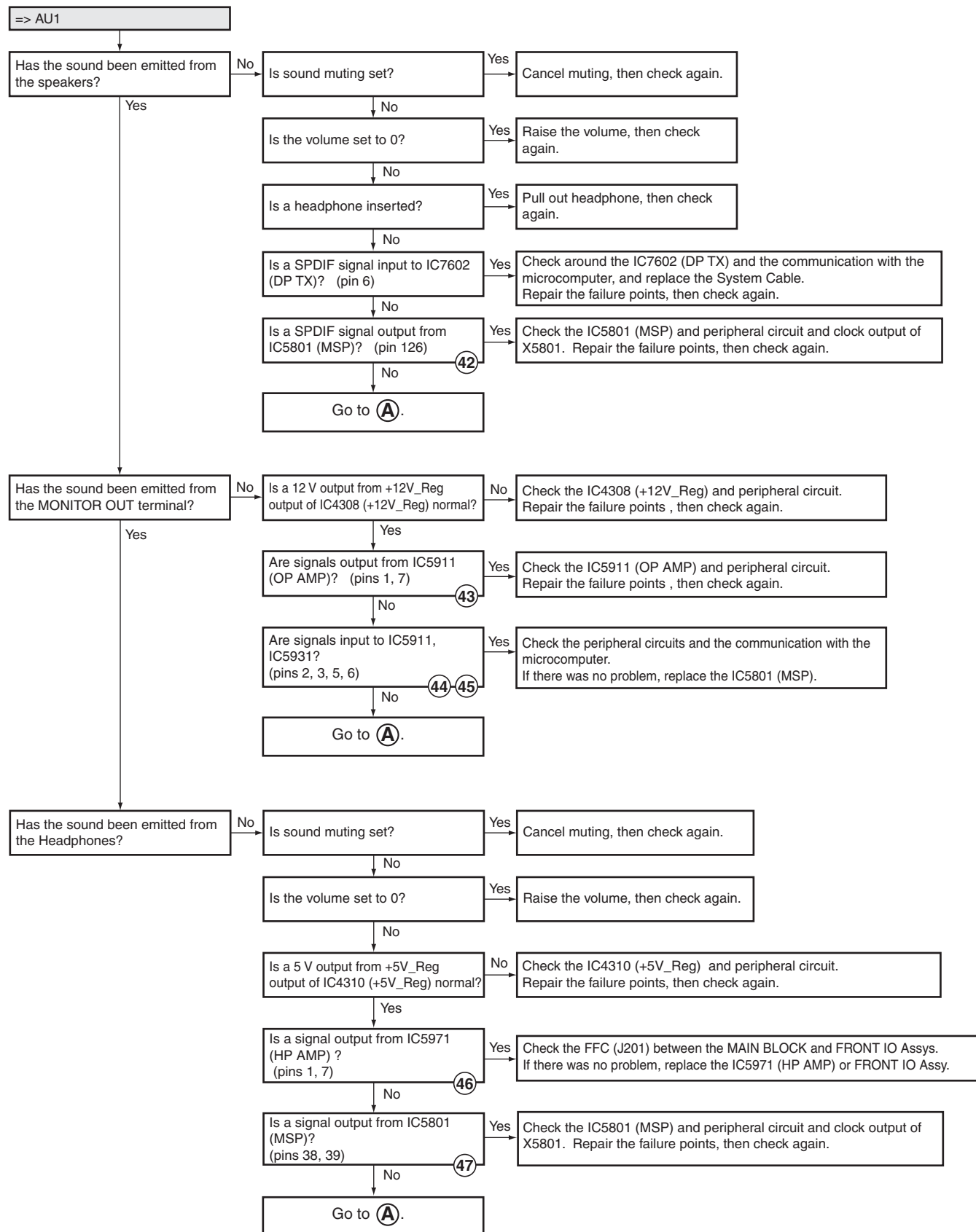
[5] HOME GALLERY

Flowchart of Failure Analysis for The Home Gallery



[6] AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System



A

A

Has the sound of the Analog broadcasting output?

No
Is a SIF signal input to IC5801 (MSP)? (pin 68)

No
Check the communications between the U5301 (FRONTEND) and the microcomputer and between the U5301 and IC5801. If there was no problem, replace the U5301 (FRONTEND), then check again.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

B

Has the sound of the HDMI output?

No
Check that the HDMI switch of the MENU is properly set.

No
Set a MENU definitely, then check again.

Yes

Yes
Is a SPDIF signal output from IC4901 (HDMI RX)? (pin 78)

No
Check the circuits between IC5001 (HDMI SW) and IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is a SPDIF signal input to IC5801 (MSP)? (pin 4)

No
Check the communications around the IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace IC5801 (MSP), then check again.

C

Has the sound of the INPUT 1, 2, 3 (RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 24 to 27, 34, 35)

No
Check the circuits between JA7401 and IC5801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace IC5801 (MSP), then check again.

Has the sound of INPUT 6, PC (RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 30, 31)

No
Check the FFC (J201) between the MAIN BLOCK and FRONT IO Assy. If there was no problem, replace the FRONT IO Assy.

Yes

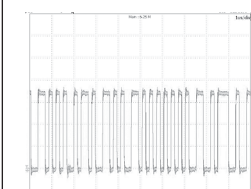
Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace IC5801 (MSP), then check again.

D

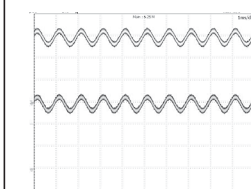
Waveforms

Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)

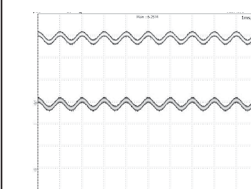
④② IC5801 - pin 126
V: 1 V/div H: 1 μ S/div



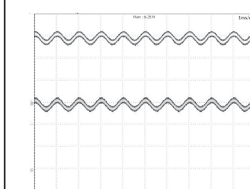
④③ IC5911 - pins 1, 7
V: 2 V/div H: 1 mS/div



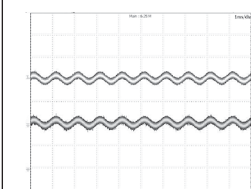
④④ IC5911 - pins 2, 3
V: 2 V/div H: 1 mS/div



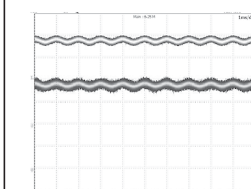
④⑤ IC5911 - pins 5, 6
V: 2 V/div H: 1 mS/div



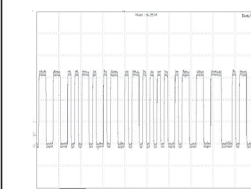
④⑥ IC5971 - pins 1, 7
V: 1 V/div H: 1 mS/div



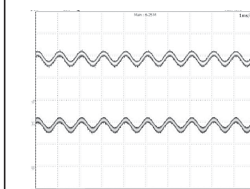
④⑦ IC5801 - pins 38, 39
V: 1 V/div H: 1 mS/div



④⑧ IC4901 - pin 78
V: 2 V/div H: 1 μ S/div



④⑨ IC5801 - pins 24, 25
V: 2 V/div H: 1 mS/div



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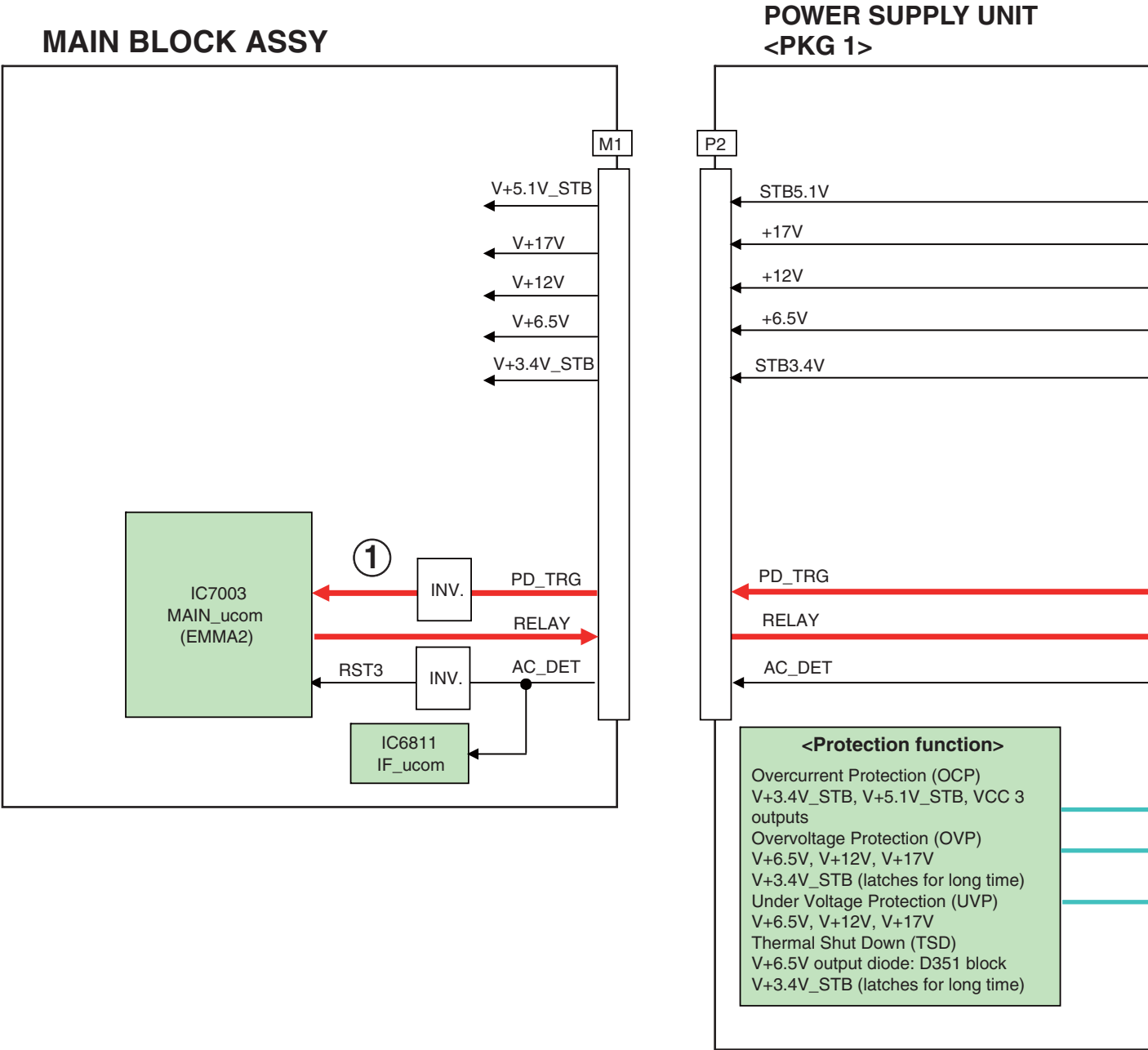
8

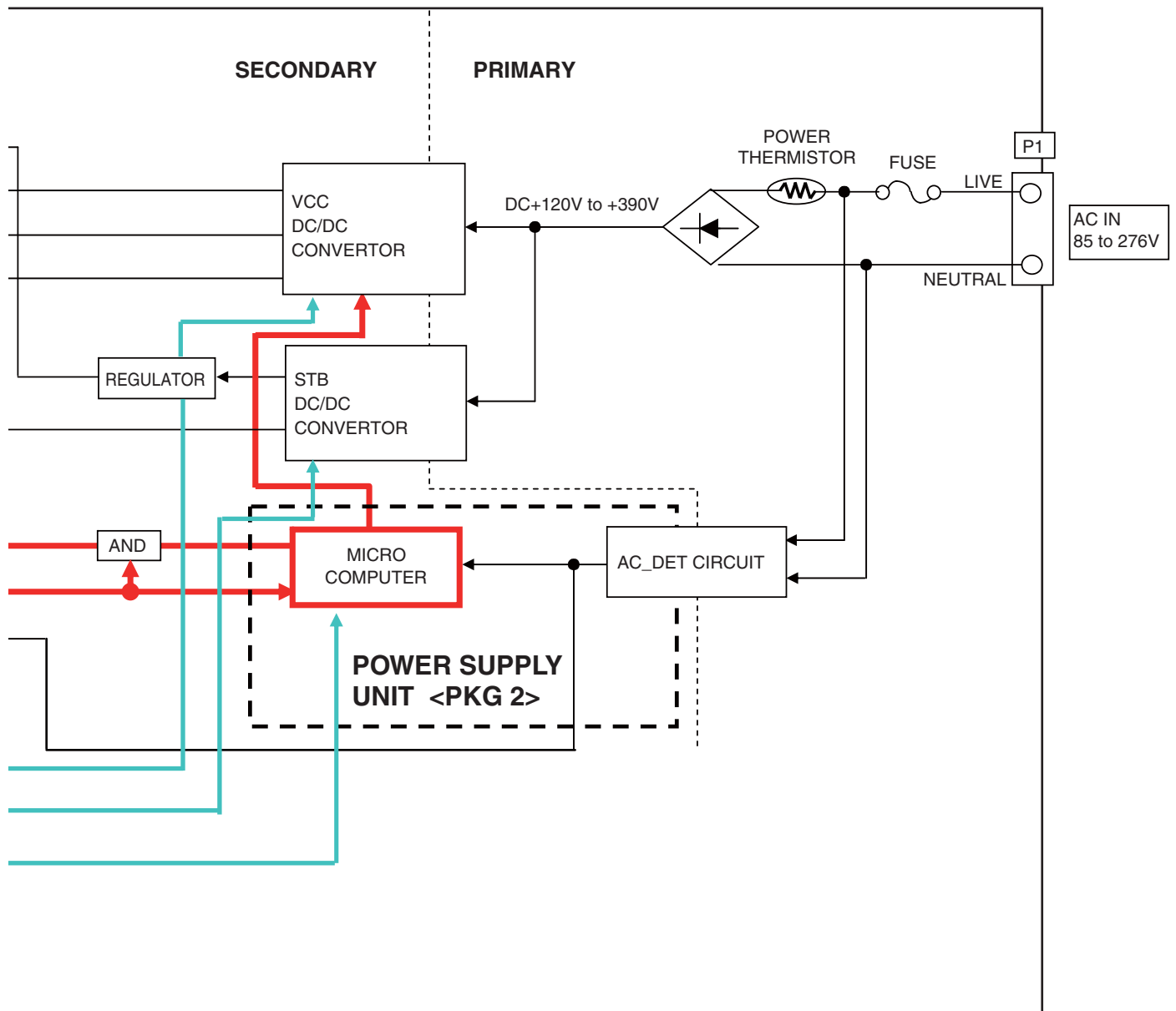
■

KRP-M01

[1] BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

Note:
The figure ① indicate the number of times the Red LED flashes when power-down occurs in the corresponding route.





[2] PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

How to Distinguish the PD (Power-Down)

About the LED for checking causes of power-down

No LED for checking causes of power-down is provided for the POWER SUPPLY Unit of the MR. However, by checking the waveforms at terminals of the microcomputer, whether a power-down was caused by failure in the POWER SUPPLY Unit, and if it was, which power system among the four was in failure can be inferred. The points at which to check waveforms and how to distinguish power-down causes are described below:

<Points at which to Check Waveforms>

Waveforms between Pin 3 of CN801 and GND (secondary radiator, display chassis, etc.) Refer to the section "Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup" in the "7.2 DISASSEMBLY".

<How to Distinguish>

If a power-down was caused by failure in the POWER SUPPLY Unit, a pulse waveform is output at the above-mentioned points. (It is assumed that STB3.4 V power is properly output.)

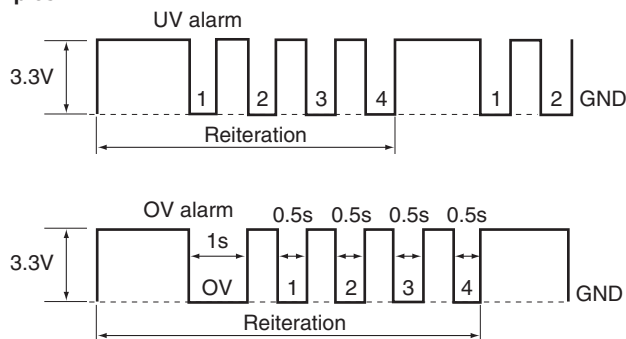
By counting the frequency of "Lo" in the pulse waveform, the cause of power-down can be identified.

Frequency of "Lo"	Cause	
	Output Voltage	Overvoltage (OV) or Undervoltage (UV)
Once	+12V	OV or UV *
Twice	+17V	OV or UV *
3 times	+6.5V	OV or UV *
4 times	Protection against overheat	

*How to distinguish OV and UV:

If the first "Lo" duration of a pulse is long (1 s), the cause is OV. As the three output voltages are electromagnetically linked and interact with one another, the frequency may vary among 1-3, depending on the type of power-down.

Examples:



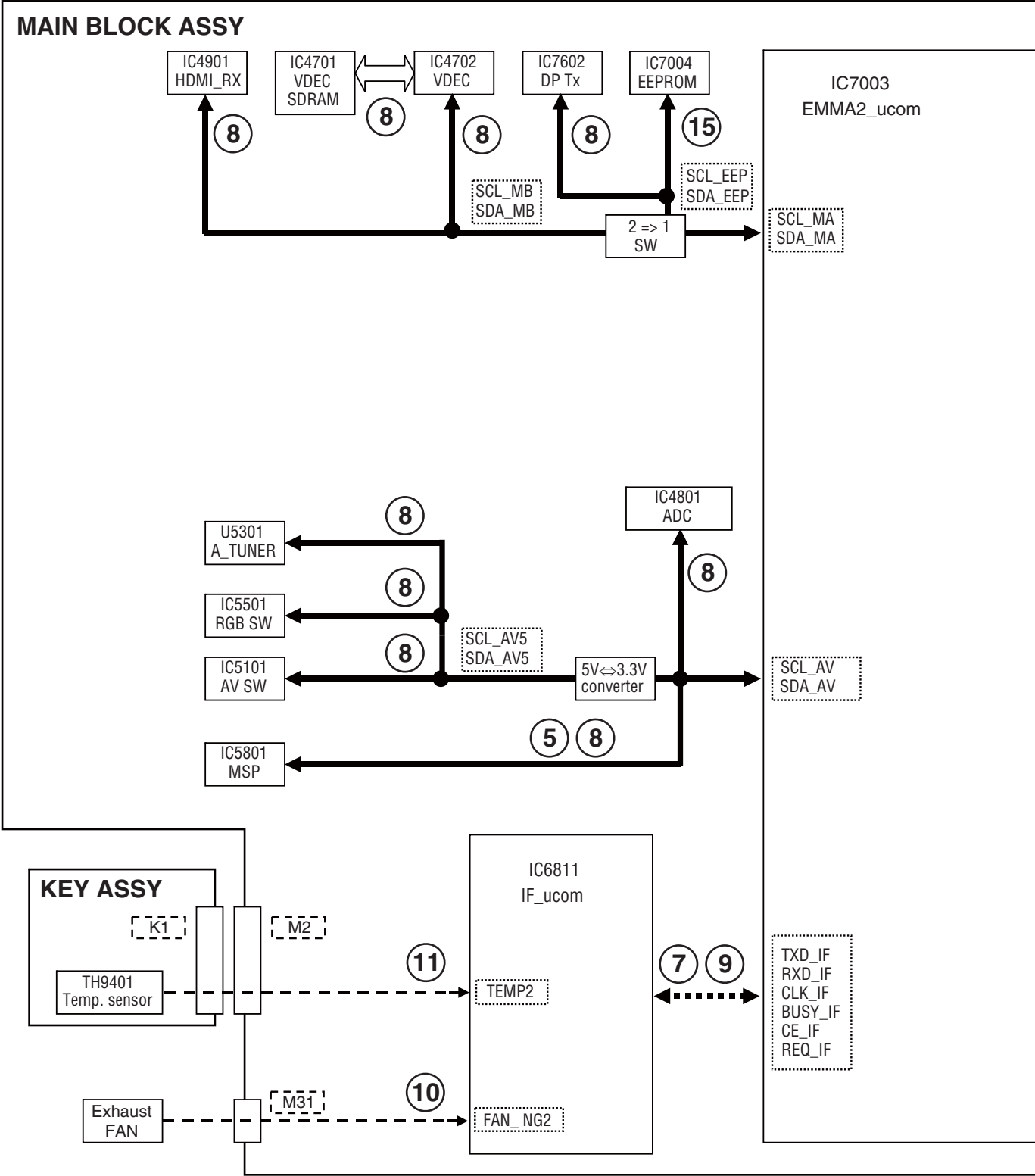
How to Diagnose the PD

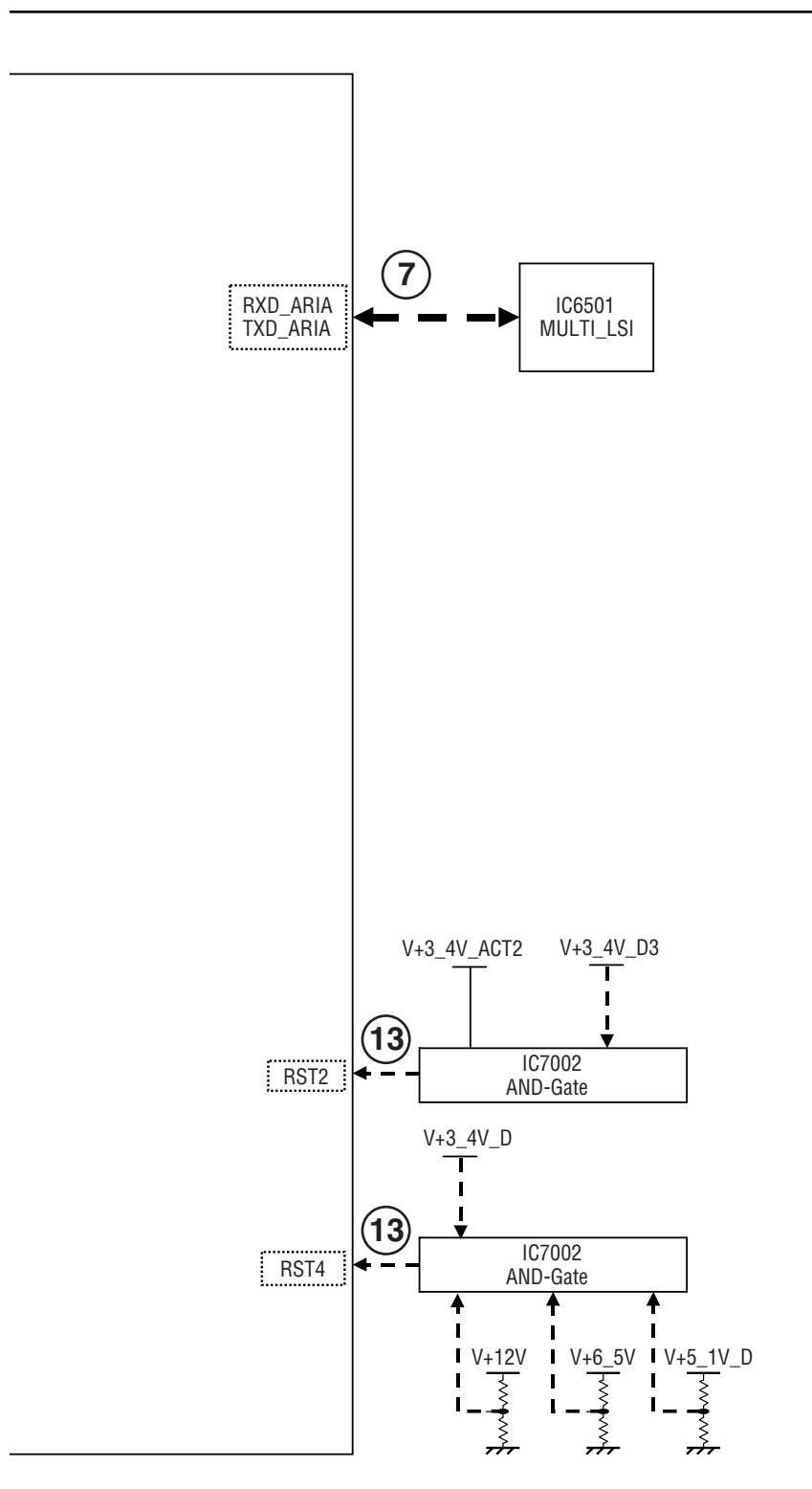
Frequency of LED Flashing	History Indication in Factory Mode	Assy	Cause of power-down (activated protection circuit)	Point to be Checked	Possible Defective Parts
Red, once	MR-PWR	MAIN BLOCK Assy	Overcurrent in 6.5 V power	5V_ANT-REG	IC4305, C4305
				5V_IO-REG	IC4310, C4301
				3CH-DD converter	IC4402 C4405, C4406, C4409, C4463, C4464, C4466 to C4468
				FET	Q4417, Q4416, Q4411
				1CH-DD converter	IC4501, C4517
			Overcurrent in 12 V power	FAN-REG	IC4302, C4342
				8V_IO-REG	IC4309, C4315
				LNB	IC4503
			Overcurrent in 17 V power	12V_IO-REG	IC4308, C4303
			Overcurrent in 3.4 V power	1.8V_IO-REG	IC4604, C4609 C4820, C8103
		POWER SUPPLY Unit	V+6.5V UVP	TP V+6.5V	Voltage drop due to overcurrent on the load side
			V+12V UVP	TP V+12V	Voltage drop due to overcurrent on the load side
			V+17V UVP	TP V+17V	Voltage drop due to overcurrent on the load side
			STB3.4V OCP	TP STB3.4V	C151, C153, C152, D152, or Z152, and abnormal current on the load side that is connected to STB3.4 V power
			STB5.1V OCP	TP STB5.1V	C155 and abnormal current on the load side that is connected to STB5.1 V power And abnormal current on the load side that is connected to STB5.1 V power
			VCC OCP	TP V+6.5V	D351, C351, C352, C353, and abnormal current on the load side that is connected to V+6.5V power
				TP V+12V	D352, C357, C358, and abnormal current on the load side that is connected to V+12V power
				TP V+17V	D353, C359, and abnormal current on the load side that is connected to V+17V power
			STB3.4V OVP	TP STB3.4V	PC121, Z151
			VCC OVP	TP V+6.5V TP V+12V	PC301, Breakage in the line to/from the P2 output connector Z351
			STB3.4V TSD		Z121 control IC and abnormal current on the load side that is connected to STB3.4 V power
			V+6.5V Rectifier diode (D351) TSD		D351 or D352, and abnormal current on the load sides that is connected to V+6.5 V and V+12 V

Note: Although replacement of the whole POWER SUPPLY Unit is required (replacement of only defective parts on the POWER SUPPLY Unit is not possible), the circuit symbols are described for reference

[1] BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

Note : The figures ① to ⑮ indicate the number of times the Blue LED flashes when shut-down occurs in the corresponding route. ⑫ LED is not flashed.





[2] SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		
			MAIN	SUB	
Blue 5	Audio	Abnormality in MSP	AUDIO	MSPMAP	
Blue 7	Failure in 3-wire serial communication with the main microcomputer	IF microcomputer	MA-3L	IF	
		MULTI		MULTI	
Blue 8	Failure in IIC communication with the main microcomputer	Tuner1	MA-IIC	FE1	
		MSP/MAP		MSPMAP	
		AV Switch		AV-SW	
		RGB Switch		RGB-SW	
		Main VDEC		VDEC	
		VDEC SDRAM		SDRAM	
		AD/PLL		ADC	
		HDMI		HDMI	
		DisplayPort Tx		DP-TX	
Blue 9	Failure in communication with the main microcomputer	—	MAIN	—	
Blue 10	Abnormality in FAN	FAN2	FAN	FAN2	
Blue 11	High temperature of the unit	—	TEMP2	—	
Blue 12	Digital Tuner	—	—	—	
Blue 13	Failure in the power supply	DC-DC Converter power decrease	RST-MA	M-DCDC	
		POWER SUPPLY		RELAY	
Blue 15	Main EEPROM	Main EEPROM communication error	MA-EEP	—	

A

Checkpoint	Possible Defective Part	Remarks
Power supply for MSP and MSP	IC5801, IC4604, Q4616	Check the MSP, its power and periphery parts (e.g. reset line).
Communication line between IF and MAIN	IC7003, IC6811	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Communication line between MULTI and MAIN	IC7003, IC6501	Check the communication lines (TXD_ARIA/RXD_ARIA)
IIC communication line between Tuner and MAIN	U5301, IC7003	Check the communication lines (SCL_TU/SDA_TU or SCL_AV/SDA_AV)
IIC communication line between MSP/MAP and MAIN	IC5801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between AV_SW and MAIN	IC5101, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between RGB_SW and MAIN	IC5501, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between M_VDEC and MAIN	IC4702, IC7003	Check the communication lines (SCL_MB/SDA_MB)
Communication line between VDEC and SDRAM	IC4701, IC4702	Check the communication lines (SDRAM), Failure in SDRAM
IIC communication line between ADC and MAIN	IC4801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between HDMI_RX and MAIN	IC4901, IC7003	Check the communication lines (SCL_MB/SDA_MB)
IIC communication line between DP_TX and MAIN	IC7602, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)
Communication line between IF and MAIN	IC6811, IC7003	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the FAN		FAN_NG
Periphery of the cable at M31		Check if cables are firmly connected.
Periphery of the fan control regulator	IC4302	Check that the voltage outputs it.
Ambient temperature		TEMP2 A shutdown occurs because of high temperature.
Temperature sensor or its periphery	TH9401	TEMP2
Periphery of the cable between M2 and K1	CN4204, CN9401	Check if cables are firmly connected.
—	—	—
RST2 V+3_4V_ACT2, V+3_4V_D3	IC7002	Check if each voltages are started.
RST4 V+12V, V+6_5V, V+5_1V_D, V+3_4V_D	IC7002	Check if each voltages are started.
V+12V, V+6_5V, V+17V	POWER SUPPLY Unit	Check if each voltages are started.
Check the cable M1	CN4203	Check if cables are firmly connected.
IIC communication line between EEPROM and MAIN	IC7004, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)

B

C

D

E

F

3.5 NON-FAILURE INFORMATION

[1] INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 3 or 4 or 5 signal is not correct.	The color setting for INPUT 3 or 4 or 5 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 3 or 4 or 5 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 3 is not output. No HDMI signal is input.	The audio setting for INPUT 3 is any setting and a video signal is not input. If the audio setting is any setting to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output.
No sound of signals to INPUT 3 or 4 or 5 is output.	The setting on the side of the HDMI output equipment is wrong. (Example: Dolby Digital)
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
MONITOR video output	
The video output signal from the MONITOR output is deteriorated. Or when the video output signal from the MONITOR output is recorded, its playback picture is deteriorated.	The video signal output from the MONITOR output is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 1 or 2.	The video signal is not output from the MONITOR output when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 3 or 4 or 5.	The video signal is not output from the MONITOR output when the HDMI signal is selected.
MONITOR audio output	
The image displayed on the PDP is not synchronized with the sound from the MONITOR audio output.	The audio signal from the MONITOR output is synchronized with the video output signal from the MONITOR output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI (excluding PC)) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	The component video cable is connected to the same input function as for the S video (even if no signal is input to the component video connector, merely having something plugged in to the connector will result in judgement that a signal is being fed in and the component video connector takes priority). (Priority of connectors: component video > S video > composite video)
The video signal to the composite video connector is not displayed.	The S Video or component video cable is connected to the same input function as for the composite video. (Priority of connectors : component video > S video > composite video)

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.

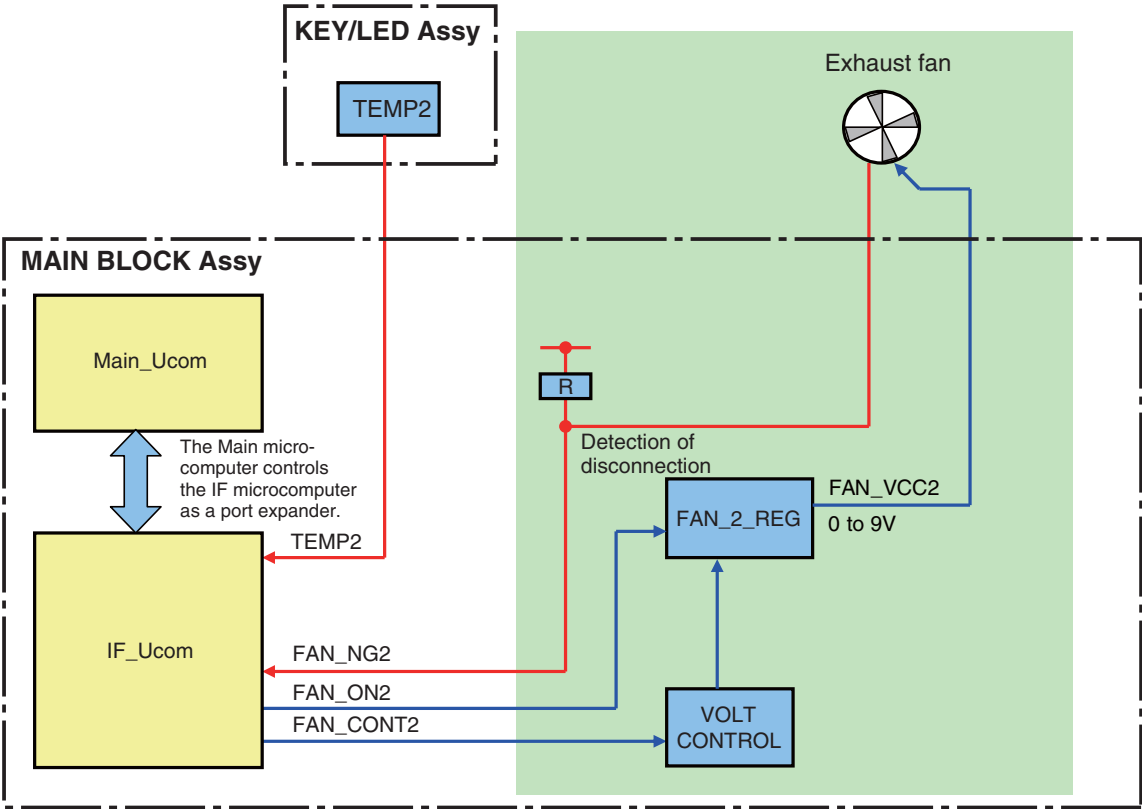
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

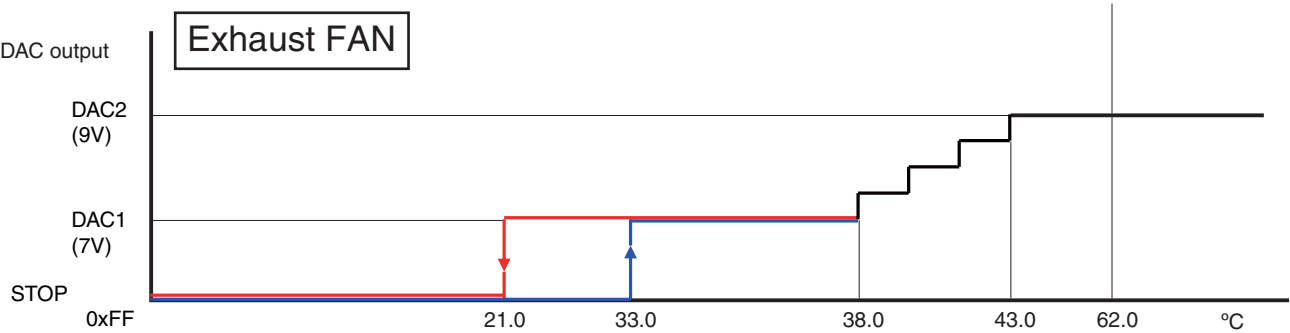
In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

[1] SPECIFICATION OF THE FAN CONTROL

■ Block diagram



■ Operation specifications



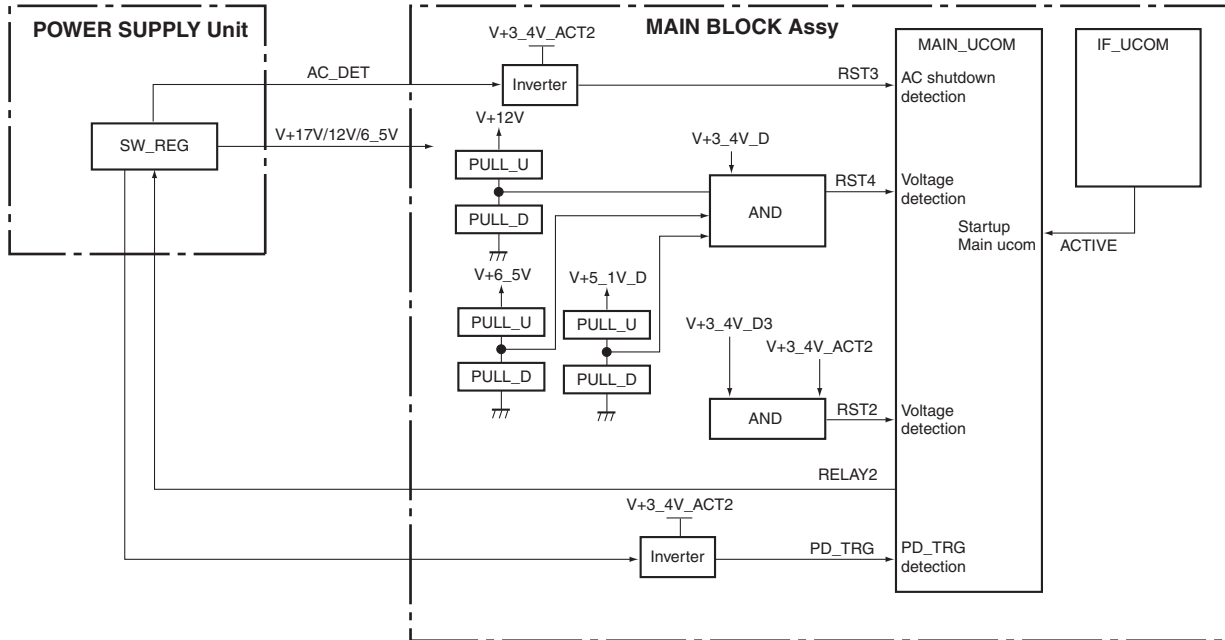
Notes:

- The operating temperature of the fan is different from the ambient temperature, because the sensor temperature is read by the microcomputer.
- The fan may not start rotating until the internal temperature of the unit reaches a certain level, such as immediately after the unit is turned on.
- When the temperature rises, the sensor voltage of TEMP2 decreases.
- When the voltage of the DAC output for exhaust FAN decreases, rotation speed of FAN rises.

[2] PROCESSING IN ABNORMALITY

Power supply and DC-DC converter

● Circuit configuration

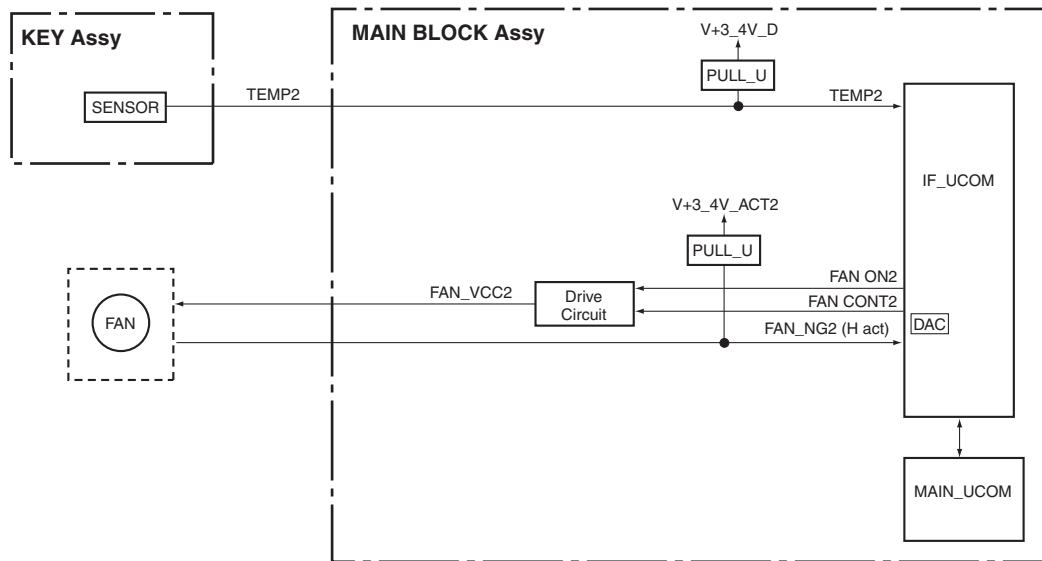


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	<ul style="list-style-type: none"> Panel screen ON (RST4 = H and PSW1 = H) While awaiting restoration of RST2 (RST2 = L) 	Shutdown occurs immediately Blue LED flashes 13 times.
RST3	—	—	Excepting passive standby	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, and monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY2 is ON. or for 2 sec while the unit is ON or in Functional STB.	RELAY2 = ON (High)	Shutdown occurs immediately Blue LED flashes 13 times.
PD_TRG	VCC power (MR-PWR)	Shutdown occurs when the signal is continuously "L" for 30msec * 3 times after RELAY2 is ON.	<ul style="list-style-type: none"> RELAY2 = ON Monitor it after 3 sec. 	Power-down occurs immediately Red LED flashes once.

Fan and temperature sensor

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
FAN_NG2	FAN	Shutdown occurs when the signal is "H." 1 S * 3 times.	RST4 = H and FAN_ON2 = H (Monitoring starts 3 sec after the above conditions are established.)	Shutdown occurs immediately Blue LED flashes 10 times.
TEMP2	High temperature at MR	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times.	RST4 = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. In the Functional STB: Shutdown occurs immediately Blue LED flashes 11 times.

[3] HOW TO OPERATE THE MEDIA RECEIVER SEPARATELY

● Necessary items for operation

- Media Receiver
- DP-to-HDMI conversion jig: GGF1627 (with the AC adaptor)
AC adaptor INPUT: 100 V to 240 V, 50/60 Hz, 0.3 A
OUTPUT: DC 6 V, 1.8 A $\ominus \text{---} \bullet \text{---} \oplus$
- Monitor or TV (with which an image with resolution of 1920 × 1080 p, 60 Hz can be displayed, with HDMI input)
Note: When checking with DVI monitor, setting change of this jig is required.
- DP cable (GGP1117) and HDMI cable
- G8 or G9 remote control unit (in case of controlling by remote control unit)
- PC and RS-232C straight cable (in case of controlling by PC)
- HDMI -DVI cable (in case of connecting with DVI monitor)

● Connection

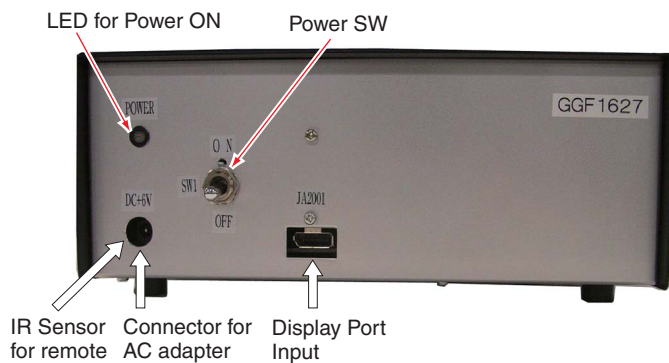


Fig.1 DP - HDMI Conversion tool (Front side)

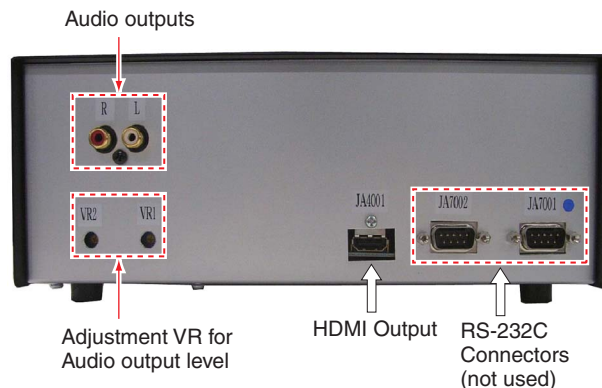
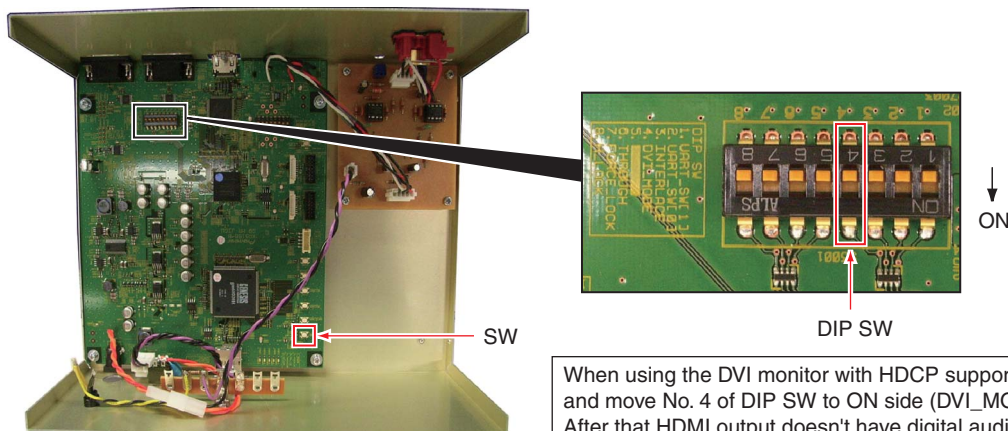


Fig.2 DP - HDMI Conversion tool (Rear side)



When using the DVI monitor with HDCP support, remove a bonnet and move No. 4 of DIP SW to ON side (DVI_MODE). After that HDMI output doesn't have digital audio signal.

Fig.3 DP - HDMI Conversion tool
DIP SW Setting (output mode setting for HDMI connector)

● Preparation

- Set the MR from System Operation mode to Standalone Operation mode.
The MR is normally set to System Operation mode. If the MR is turned on in this mode, it cannot be operated properly.

To change to Standalone Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on.
2. In this state, send the MRMS01 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL - key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

● Operation

After the setting in Preparation is completed, turn the units on in the following order then perform analysis:

1. Turn the monitor or TV on. (Set the input mode to HDMI.)
2. Turn the DP-to-HDMI conversion jig on.
3. Turn the MR on.

If no image is displayed on the monitor or TV after the MR is turned on, press and hold the switch on the DP-to-HDMI conversion jig for about 1 sec.

● How to control the MR

- With the remote control unit:
The infrared receiver (IR) sensor for remote control unit is placed inside of the jig. Please point the remote towards the AC adaptor connector on the jig.
Unlike normal products, sensor reception of this tool is not so sensitive due to reduce interference with another Pioneer Plasma TV.
Please keep the distance between the remote control unit and the sensor less than 15cm.
- With RS-232C commands:
Connect a PC to the MR via their RS-232C ports and send RS-232C commands from the PC. (Baud rate: 9600 bps)

A

● After analysis is finished

After analysis in Standalone Operation mode is finished, before returning the MR to the customer, be sure to return the unit to System Operation mode, as shown in the procedures below.

If it remains in Standalone Operation mode, when it is connected with the customer's monitor, the monitor will detect a connection error and not operate properly, and no image will be displayed.

To set the MR to System Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on.
2. Send the MRMS00 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in System Operation mode.

4. Connect the MR directly with the monitor and check that they operate properly.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL + key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

● Products whose proper operation has been proved when HDMI connection is performed with this MR

Model Number	Manufacturer	Built-in Audio AMP
PDP-5000EX	Pioneer	○ (SP is required)
G8	Pioneer	○ (SP is required except 42 inch)
FP241WJ	BenQ	× (External audio amp and SP is required)
3008WFP	DELL	× (External audio amp and SP is required)
HD2441W	EIZO NANAO	× (External audio amp and SP is required)

● Attention point for audio volume

Audio output level is connected with MR volume level. If VR level of a MR is normal (around 10 - 15) and displayed HDMI TV or audio AMP is not so high level, sound level is very low. Please turn up the volume to appropriate level either or both units.

In case of turning up volume of MR to very high level during testing, turn down it to normal level and then turn off the unit. Otherwise when connecting the MR with panel, very loud sound is output from speakers and it might be a danger.

● Attention point when using another Pioneer Plasma TV

Please pay attention to interference of IR signal when using Pioneer plasma TV as HDMI monitor.

If remote signal is also received to Pioneer plasma TV when operating MR with this tool and remote, you might confuse of which unit is controlled by the remote.

The following methods are some of suggestions to control only MR with the conversion tool.

Using the remote control unit and the conversion tool (AC adaptor connector) as nearly as possible hiding remote sensor of the plasma TV temporally.

● Setting Method to connect with DVI monitor with HDCP support (DVI mode)

1. Open bonnet with power off condition.
2. Refer to Fig. 3, move the DIP SW No. [4] to ON side.
After this setting, DVI mode signal is output from HDMI output connector of HDMI.

Note: 1. Some of DVI monitors might not display output signal from this conversion tool.
2. Output signal does not contain digital audio signal.

3.7 LIST OF RS-232C COMMANDS

RS-232C command list

Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
A					
AMT	S00	Audio mute OFF			
	S01	Audio mute ON			
C					
CHN	FWD	Changing tuner preset channel (1 step forward)			
	REV	Changing tuner preset channel (1 step reverse)			
CHM		Clearing data of the hour meter		●	Last memory is performed to the panel side.
CHR		Clearing data of the hour meter of MTB/MR side			Clear the hour meter of screen display of MAIN NG.
CNG		Clearing data of the SD history of MTB/MR side			
D					
DPT		Rewriting the Display Port Tx			
DW*		To subtract * to the adjustment value (* = 0 to 9, subtract 10 with DW0 and set to minimum value with DWF)			
F					
FAN		Factory mode: OFF		●	
FAY		Factory mode: ON			
FST	S41	Set each memory setting of MR side to the General model.		●	
	S42	Set each memory setting of MR side to the China model.		●	
I					
INA	***	Switching the terrestrial analog signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial analog signal (Channel is in the last.)	MAIN		
INH		Switching the Home Media Gallery / Home Gallery			
INP	S01	Input: INPUT1	MAIN		
	S02	Input: INPUT2	MAIN		
	S03	Input: INPUT3	MAIN		
	S04	Input: INPUT4	MAIN		
	S05	Input: INPUT5	MAIN		
	S06	Input: INPUT6	MAIN		
	S07	Input: INPUT7 (PC)	MAIN		
M					
MRM	S00	Setting the mode to normal operation	MAIN	●	
	S01	Setting the mode to standalone operation	MAIN	●	
MST	S00	Display one screen			
	S01	PsideP (Main size: normal)			
	S02	PinP (Right down)			
	S03	PinP (Right up)			
	S04	PinP (Left down)			
	S05	PinP (Left up)			
	S08	SWAP (Exchanging sub-screen)			
O					
OSD	S00	OSD setting: OFF	MAIN		
	S01	OSD setting: ON	MAIN		
P					
POF		Power: OFF	MAIN		
PON		Power: ON	MAIN		
PUC	S00	PURE CINEMA: OFF	MAIN	●	
	S01	PURE CINEMA: Standard	MAIN	●	
	S02	PURE CINEMA: Advance	MAIN	●	
	S03	PURE CINEMA: Smooth	MAIN	●	
Q					
QMT		Acquiring temperature of MTB/MR side and Fan speed			
QNG		Acquiring shutdown information of MTB/MR side			
QS1		Acquiring unit data, such as the software version			
QSE		Acquiring unit data, such as the software version of MTB/MR side (specific destination)			

A

B

C

D

E

F

Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
S					
SDF	S00	SRS DEFINITION: OFF			
	S01	SRS DEFINITION: DEFINITION1			
	S02	SRS DEFINITION: DEFINITION2			
	S03	SRS DEFINITION: DEFINITION3			
SML	***	Adjustment of the side mask level	MAIN	●	
SRS	S00	SRS: OFF			
	S01	SRS: SRS1			
	S02	SRS: SRS2			
	S03	SRS: SRS3			
SZM	S00	Setting the screen size to Dot by Dot	MAIN		
	S01	Setting the screen size to 4 :3	MAIN		
	S02	Setting the screen size to FULL or FULL 1080i	MAIN		
	S03	Setting the screen size to ZOOM	MAIN		
	S04	Setting the screen size to CINEMA	MAIN		
	S05	Setting the screen size to WIDE or WIDE1	MAIN		
	S06	Setting the screen size to FULL 14:9	MAIN		
	S07	Setting the screen size to CINEMA 14:9	MAIN		
	S11	Setting the screen size to AUTO	MAIN		
	S12	Setting the screen size to WIDE2	MAIN		
T					
TBS	S00	TRUBASS: OFF			
	S01	TRUBASS: TRUBASS1			
	S02	TRUBASS: TRUBASS2			
	S03	TRUBASS: TRUBASS3			
U					
UP*		To add * to the adjustment value (* = 0 to 9, add 10 with UP0 and set to maximum value with UPF)			
V					
VOL	UP*, DW*, ***	To adjust the volume			Use this command by designating the adjustment value *** (=000 to 060).
Z					
ZME	***	Initializing the video EEPROM data of the MTB/MR side		●	

3.8 DETAILS OF RS-232C COMMANDS

Following items are same as the KRP-M01/WYSIXK5.

- [1] QS1 (Software Version Information of the Microcomputer)
- [3] QMT (STATUS INFORMATION OF MTB/MR SECTION
- [4] QNG (SHUTDOWN INFORMATION OF MTB SECTION)
- [5] FAY/FAN (ADJUSTMENT COMMANDS PERMISSION/PROHIBITION)

[2] QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	Return data: 3 (ECO) + 32 (DATA) + 2 (CS) = 37 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSE
1	Reserved	8 byte	*****
2	User setting password	4 byte	1234
3	DP Tx firmware version	16 byte	123456789ABCDEFGH
4	DP Tx hardware version	4 byte	ABCD
CS	Check Sum	2 byte	13

4. SERVICE FACTORY MODE

The following items in the service manual of KRP-M01/WYSIXK5 are not applicable to this model.

A DETAILS OF THE FACTORY MENU

[5] INITIALIZE

[5-3] DTB SERVICE MENU (+)

■ DIGITAL TUNER SERVICE MENU

[1] REMOTE CONTROL CODE IN DIGITAL TUNER SERVICE MENU

[2] HIERARCHICAL TABLE OF DIGITAL TUNER SERVICE MENU

[3] DIGITAL TUNER SERVICE MENU SCREEN

[4] HOME MEDIA GALLERY SCREEN

B [5] DIGITAL SCREEN

[6] SATELLITE SCREEN

[7] SOFTWARE VERSION SCREEN

■

4.1 OUTLINE OF THE SERVICE FACTORY MODE

Following items are same as the KRP-M01/WYSIXK5.

C

[1] SERVICE FACTORY MODE TRANSITION CHART

[2] HOW TO ENTER/EXIT SERVICE FACTORY MODE

[3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

[5] PDP SERVICE REMOTE CONTROL

■

D

■

E

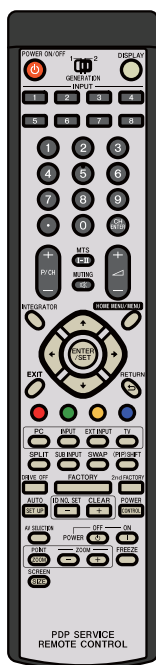
■

F

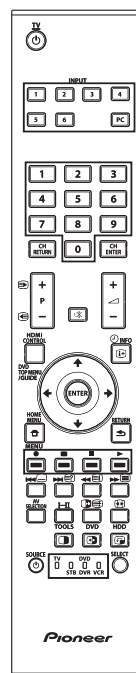
[4] REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
↓ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
← (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 6)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Factory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



PDP service
remote control



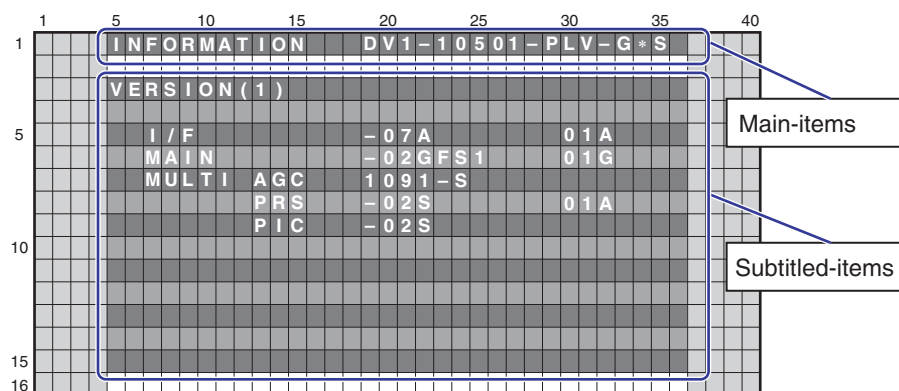
Supplied
remote control

[6] FACTORY HIERARCHICAL TABLE

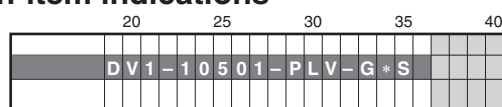
Large Item			Variable / Adjustment Range	Remarks
	Middle Item	Small Item		
4.2 [1] INFORMATION				
	[1-1] VERSION (1)			
	[1-2] VERSION (2)			
	[1-3] VERSION (3)			
	[1-4] MAIN NG	CLEAR <=>	NO <=> YES	
	[1-5] TEMPERATURE			
	[1-6] HOUR METER	CLEAR <=>	NO <=> YES	
	[1-7] HDMI SIGNAL INFO 1			
	[1-8] HDMI SIGNAL INFO 2			
	[1-9] VDEC SIGNAL INFO 1			
	[1-10] VDEC SIGNAL INFO 2			
4.2 [2] PANEL FACTORY (+) (*1)				
	[2-1] PANEL INFORMATION			
	[2-2] PANEL WORKS			
	[2-3] POWER DOWN			
	[2-4] SHUT DOWN			
	[2-5] PANEL-1 ADJ (+)			
	[2-6] PANEL-2 ADJ (+)			
	[2-7] PANEL FUNCTION (+)			
	[2-8] ETC (+)			
	[2-9] RASTER MASK SETUP (+)			
	[2-10] PATTERN MASK SETUP (+)			
	[2-11] COMBI MASK SETUP (+)			
4.2 [3] PANEL MAIN FACTORY (+) (*1)				
	[3-1] PM NG INFO			
	[3-2] PM STATE INFO			
	[3-3] DP_RX INFO			
	[3-4] PM_SETUP (+)			
4.2 [4] OPTION				
	[4-1] CH PRESET <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-2] AFT <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-3] SYNC DET (+)			for the technical analysis
	[4-4] CTI (+)			for the technical analysis
4.2 [5] INITIALIZE				
	[5-1] SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>		
	[5-2] FINAL SETUP	DATA RESET <=>	NO <=> GENERAL <=> CHINA	
	[5-3] Wide XGA AUTO <=>		DISABLE <=> ENABLE	for the technical analysis
	[5-4] AUTO ADJUST. <=>	AUTO ADJUST. <=>	NO <=> YES	

(*1): For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[7] INDICATIONS IN SERVICE FACTORY MODE



Main-item indications



① Input function

Input Functions	OSD
DV 1 to 6	DV 1 to 6
Terrestrial Wave (Analog)	AIR
Cable (Digital)	CBD
Home Gallery	HG
PC	PC

② SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

③ Color system and Signal type

Color System and Signal Type	OSD	
	At Composite Input	At S-connector Input
NTSC	NTV	NTS
PAL	PLV	PLS
PAL M	PMV	PMS
PAL N	PNV	PNS
PAL 60	P6V	P6S
SECAM	SCV	SCS
4.43 NTSC	4NV	4NS
BLACK/WHITE	BWV	BWS
Y/CB/CR	CBR	
Y/PB/PR	PBR	
RGB	RGB	
Digital Video signal	DIG	

④ Option (Destination, Panel Generation, etc.)

Options	OSD
KRP-500P/LFTXJ	G*S
KRP-500P/WAXJ5	G*S
KRP-600P/WAXJ5	

A

② SIG Mode and Screen size (by User is displayed)

1st and 2nd characters : Resolution of the input signal

3rd and 4th characters : Refresh rate of the input signal

5th character : Selection of the screen size

■

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.750
	60	SDTV*525i	60.000	15.750
20	50	SDTV*625p	50.000	31.500
	60	SDTV*525p	60.000	31.500
30	50	HDTV*1125i	50.000	33.750
	60	HDTV*1125i	60.000	33.750
40	50	HDTV*750p	50.000	45.000
	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
	50	HDTV*1125p	50.000	56.250
	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

C

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

D

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	●	—	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	
9	WIDE1	●	—	
A	WIDE2	●	—	

●: supported, —: unsupported

F

4.2 DETAILS OF THE FACTORY MENU

[1] INFORMATION

■ Operation items

No.	Function	Content	RS-232C Command
[1-1]	VERSION (1)	The Flash memory versions for each device are displayed.	QS1
[1-2]	VERSION (2)	The Flash memory versions for each device are displayed.	QSE
[1-3]	VERSION (3)	The Flash memory versions for each device are displayed.	QSB
[1-4]	MAIN NG	The Shutdown NG information and Event Times in the MTB section are displayed.	QNG
[1-5]	TEMPERATURE	The present temperature and the FAN rotating status are displayed.	—
[1-6]	HOURLY METER	The accumulation power ON count of the panel is displayed.	—
[1-7]	HDMI SIGNAL INFO 1	The status registers of HDMI receiver are displayed with hexadecimal.	—
[1-8]	HDMI SIGNAL INFO 2		
[1-9]	VDEC SIGNAL INFO 1	Display the signal information input to VDEC.	—
[1-10]	VDEC SIGNAL INFO 2		

[1-1] VERSION (1)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
I/F	I/F microcomputer	-07A	01A
MAIN	Main microcomputer	-02GFS1	01G
MULTI AGC	AGC data of Multi processor	1091-S	
MULTI PRS	Program of Multi processor	-02S	01A
MULTI PIC	Picture quality data of Multi processor	-02S	

[1-2] VERSION (2)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example
PASSWORD	User setting password	1234
DP TX	DP TX Firmware Version	123456789ABCDEFG
DP TX HARD	DP TX Hardware Version	2C13

[1-3] VERSION (3)

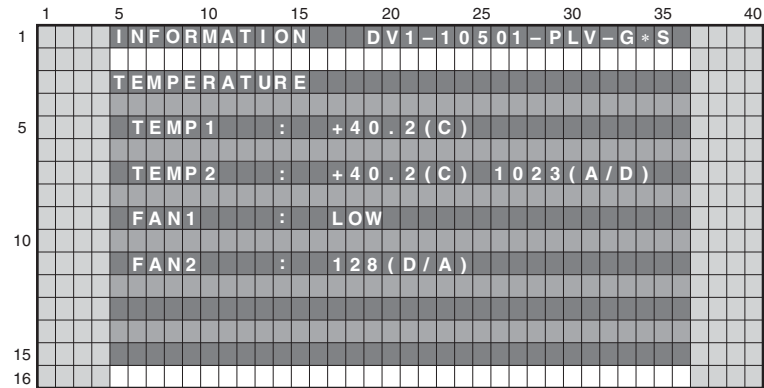
1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
P_MAIN	Panel Main microcomputer	-02AS	01A
MODULE	Module microcomputer	-06A	01A
SEQ PRS	Program of the sequence processor	-03Y	01A
Display Item	Meaning	Display Example	
DP RX	DP RX Firmware Version	123456789ABCDEFG	
DP RX HARD	DP RX Hardware Version	2C12	
Display Item	Meaning		
PANEL INFO	It displays the generation of the panel, inchage and the type of the panel. For details on display values and settings, see "10: Panel Information" in "5.9 [1] QS1 (Software Version Information of the Microcomputer)" on the Service Manual of KRP-M01/WYSIXK5.		

[1-5] TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



Display Item	Meaning
TEMP1	The temperature of the sensor on the panel side is displayed by the Centigrade (C).
TEMP2	The temperature conversion display is done with 10 bit the A/D input value of IF microcomputer. It is displayed by both the Centigrade (C) and 8 bit A/D value. Note: When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.
FAN1	Although STOP, LOW, or HIGH may be displayed, they are meaningless. Ignore those displays.
FAN2	The value of the rotation state of FAN is displayed. During a rotation of FAN, 8bit D/A value output from IF microcomputer is displayed. It is displayed with OFF during a stop.

[1-6] HOUR METER

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example
PANEL	HOUR METER of the panel	00151H 21M
P-COUNT	Accumulation power ON count of the panel	00000095 TIMES
SERIAL	Serial number of the Display (panel)	ABCDEFGHIJKLMNO

• MTB HOUR METER

In HOUR METER screen on Factory Menu, press the [ENTER/SET] key, and then it moves to the screen to clear MTB HOUR METER. (MTB HOUR METER is cleared only.)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Operation:

- Even if [←] key or [→] key is pressed, {CLEAR <=> :YES} ↔ {CLEAR <=> :NO} is repeated.
- Selecting <NO> then pressing the ENTER/SET key will return the screen to the next higher layer, without doing anything.
- Selecting <YES> then holding the ENTER/SET key pressed for 5 seconds will clear the HOUR METER (HOUR METER while the MAIN NG screen is displayed) data that are managed in MR then return the screen to the next higher layer.

[1-7] HDMI SIGNAL INFO 1

	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Displays the input signal information of HDMI terminal

Display Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTH	HDCP authentication status
MODE	HDMI mode status
BIST	HDCP Key status (Always display it with "--".)
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension colorimetry (AVI info)
RGB QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

A

BC

D

EF

[2] PANEL FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[2-1]	PANEL INFORMATION	——	——
[2-2]	PANEL WORKS	——	——
[2-3]	POWER DOWN	——	——
[2-4]	SHUT DOWN	——	——
[2-5]	PANEL-1 ADJ (+)	——	——
[2-6]	PANEL-2 ADJ (+)	——	——
[2-7]	PANEL FUNCTION (+)	——	——
[2-8]	ETC. (+)	——	——
[2-9]	RASTER MASK SETUP (+)	——	——
[2-10]	PATTERN MASK SETUP (+)	——	——
[2-11]	COMBI MASK SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[3] PANEL MAIN FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[3-1]	PM NG INFO	——	——
[3-2]	PM STATE INFO	——	——
[3-3]	DP_RX INFO	——	——
[3-4]	PM_SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[4] OPTION

Operation item

No.	Function	Content	RS-232C
[4-1]	CH PRESET <=>	Set the channel map for production line	SCP
[4-2]	AFT <=>	Set AFT of the Analog broadcasting	AFT
[4-3]	SYNC DET (+)	Set the synchronized signal detection of VDEC	——
[4-4]	CTI (+)	Set the synchronized signal detection of VDEC	——

[4-1] CH PRESET <=>

Exclusively used for production line.

[4-2] AFT <=>

Exclusively used for production line.

[4-3] SYNC DET (+)

Exclusively used for technical analysis (details omitted).

[4-4] CTI (+)

Exclusively used for technical analysis (details omitted).

[5] INITIALIZE

Operation item

No.	Function	Content	RS-232C
[5-1]	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
[5-2]	FINAL SETUP	Initialize flash memorys on virgin product status	FST
[5-3]	Wide XGA AUTO <=>	Exclusively used for technical analysis.	----
[5-4]	AUTO ADJUST. <=>	Perform the auto-adjustment setting process	----

[5-1] SIDE MASK LEVEL (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	DV1-10501-PLV-G*S						
5								
10								
15	SIDE MASK LEVEL (+)							
16								

To configure sidemask level (To adjust the values, input signal is required).

Display Item	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255, Initial value: 115)	SML

Note: In this mode (SIDE MASK LEVEL), adjustment value cannot be changed with the VOLUME +/- keys.

[5-2] FINAL SETUP

1	5	10	15	20	25	30	35	40
1	INITIALIZE	DV1-10501-PLV-G*S						
5	FINAL SETUP							
10								
15	DATA RESET <=>	: NO						
16								

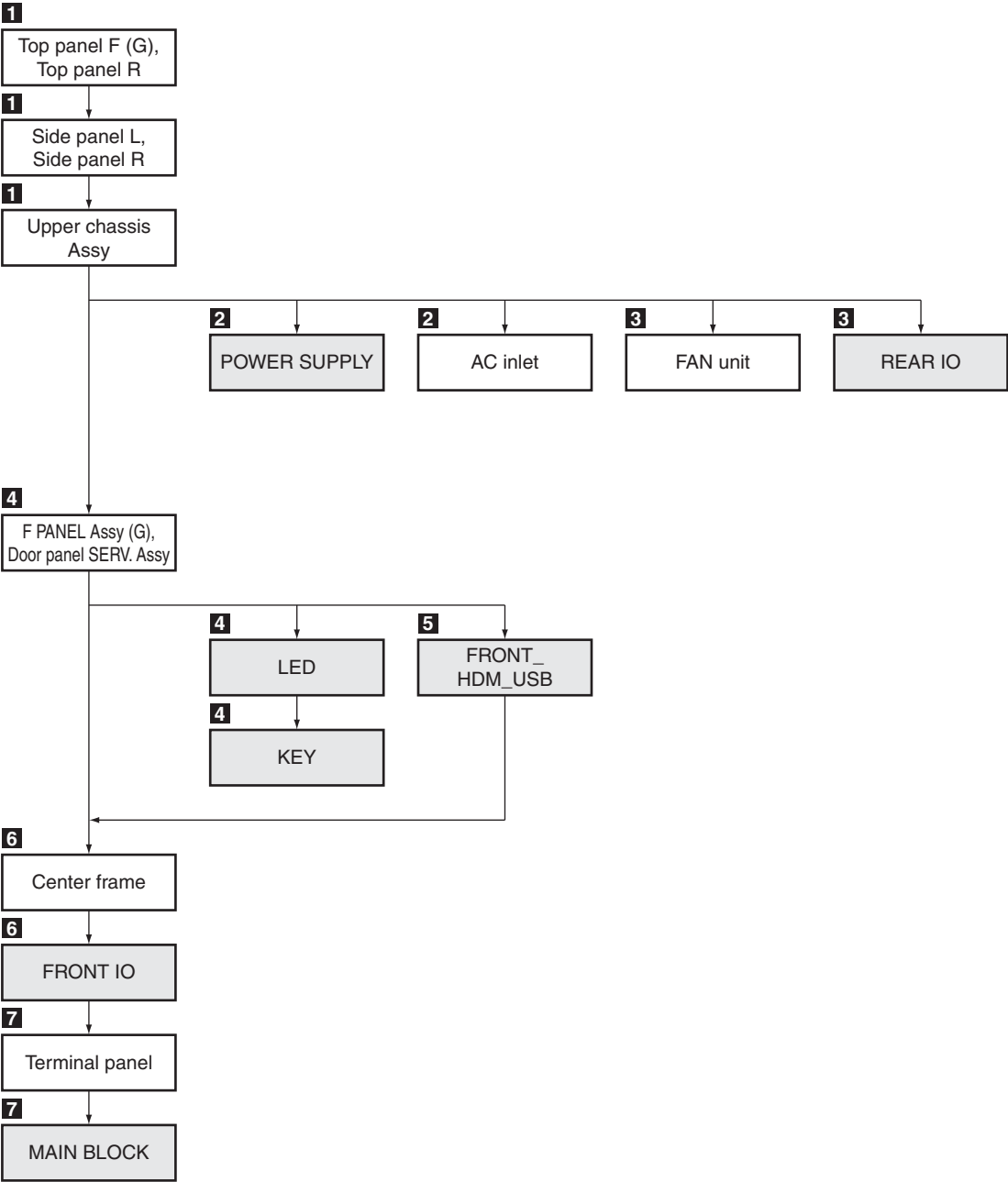
- To reset each memory values to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to previous screen.
- When the configuration is set to <GENERAL> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes as the general model.
- When the configuration is set to <CHINA> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes as the China model.

**Be sure to disconnect and connect the AC cable after FINAL SETUP.
When replacing the MAIN BLOCK Assy, the FINAL SETUP is required.**

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

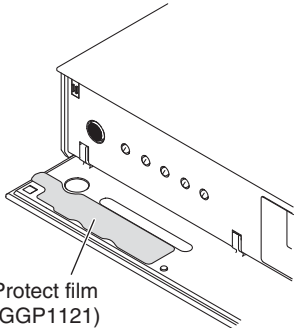
It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



A

Disassembly

Preparations

- The high-gloss resin parts of the exterior of this product are easily scratched. During disassembly and reassembly of this product, be careful not to scratch the exterior.
 - If the door of this product is pressed firmly from the front or when the KEY Assy and LED Assy are reassembled, print of the front-panel operating section may be transferred to the inside surface of the door. To avoid this, be sure to attach the protect film to the inside surface of the door before repairing. If protect film is not available, slip a cleaning cloth or the like inside the door for protection.
 - Remove the attached protect film after product installation is completed. If the repaired product is to be delivered to the customer' s home or a dealer, leave the protect film attached.
- 

Protect film (GGP1121)

B

Note on Disassembly/Reassembly

Fixing screws for the HDMI connector and system cable connector

For tightening the screws for the HDMI connector and system cable connector, do not use an electric screwdriver. Tighten them manually. If they are tightened too forcefully with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be loosened/tightened any more.

C

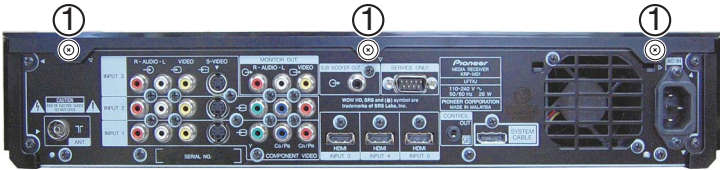
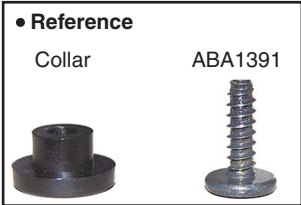
1 Exterior Section

The high-gloss resin parts of the exterior of this product are easily scratched. During disassembly and reassembly of this product, be careful not to scratch the exterior.

D

● Top panel F (G) and R

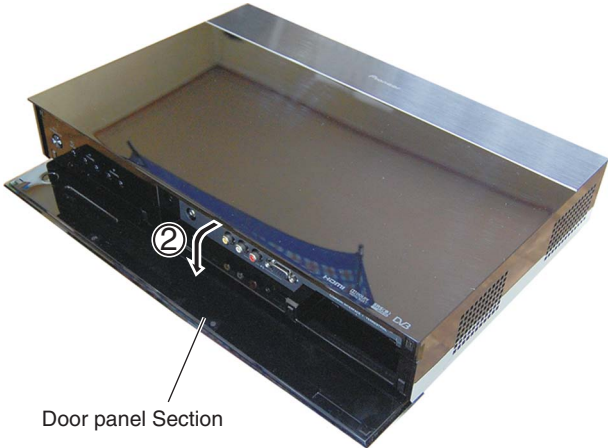
- ① Remove the three collar and three screws. (ABA1391)



● Rear view

E

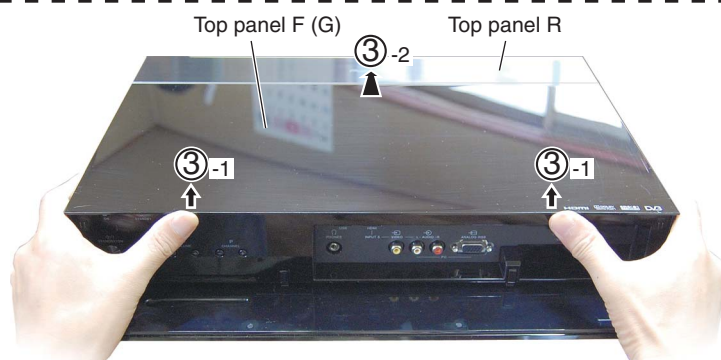
- ② Open the door panel Section.



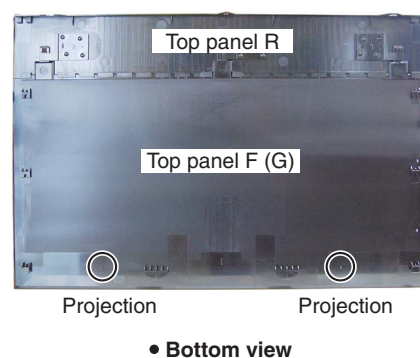
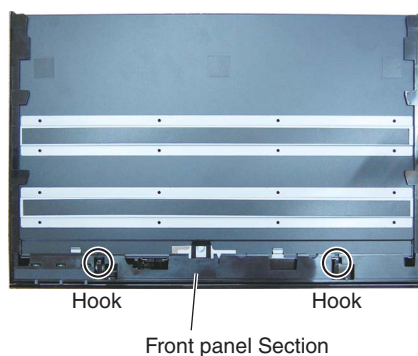
Door panel Section

F

- ③ While pushing up at two places of the top panel using your thumbs, as shown in the photo below, to unhook the top panel, remove it by sliding it toward the rear panel.

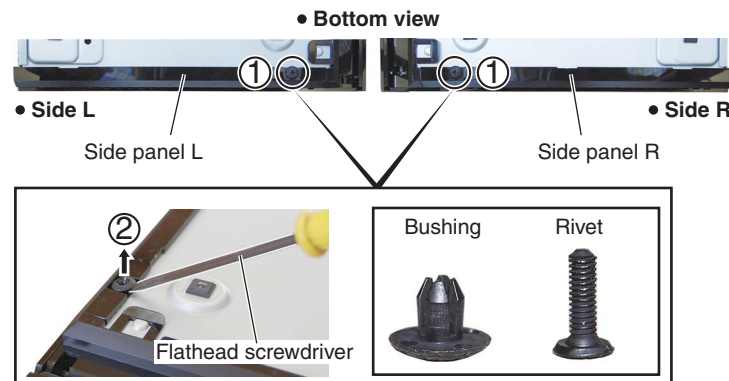


● Positions of the hooks

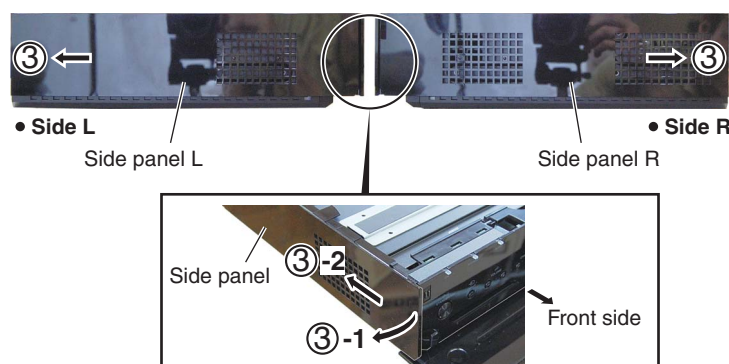


● Side panel L and R

- ① Remove the two rivets.
② Remove the two bushings, using a flathead screwdriver.



- ③ Remove the side panels L and R.
③-1 ③-2
Slide the side panel rearward, by stretching the front edge of the side panel outward, and remove it.



A

● Upper chassis Assy

① Remove the 14 screws. (BBZ30P060FTB)



● Rear view



● Side L

● Side R

B

● Screw tightening order

The other screws are random order.



C

D

② Remove the upper chassis Assy.

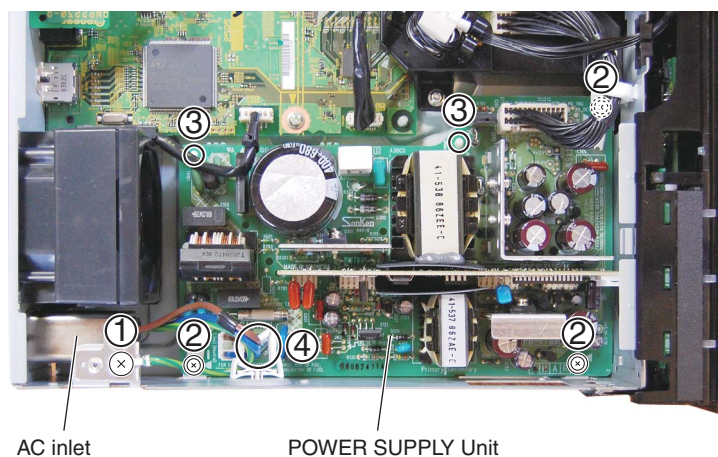


E

F

2 POWER SUPPLY Unit

- ① Remove the one screw. (BMP40P080FSN)
- ② Remove the three screws. (BBB30P080FSN)
- ③ Remove the two circuit board spacers.
- ④ Release the jumper wire.



- ⑤ Remove the two screws. (ABZ30P080FTB)
- ⑥ Remove the AC inlet.

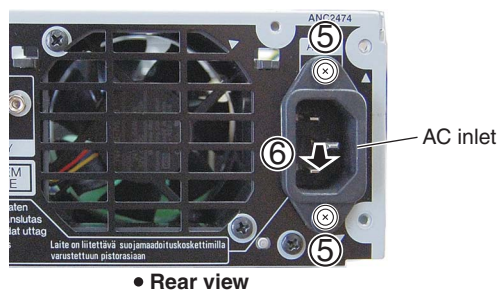
• An installation direction of the AC inlet



OK

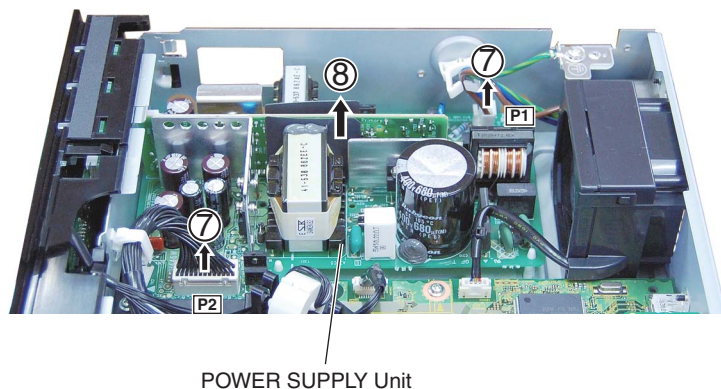


NG



• Rear view

- ⑦ Disconnect the two connectors.
- ⑧ Remove the POWER SUPPLY Unit.

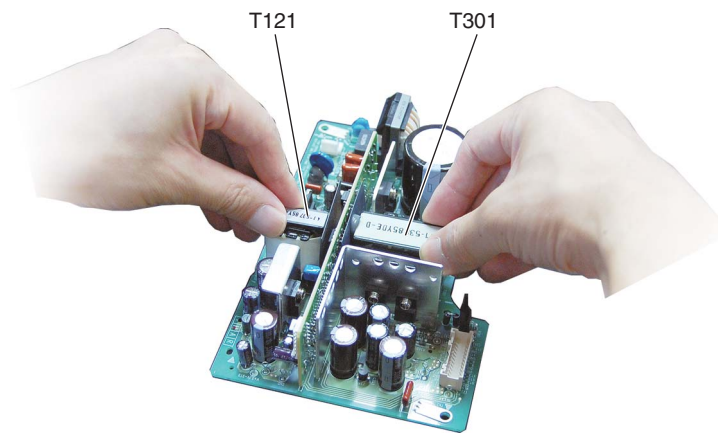


A

Notes on Removing the POWER SUPPLY Unit

● How to lift up the POWER SUPPLY Unit

When you remove the POWER SUPPLY Unit from the chassis, first lift the board by pinching T121 and T301 transformers with your fingers. When the board is lifted up to a certain height, hold it by hand. NEVER hold the board by the radiator that is adjacent to the transformer.

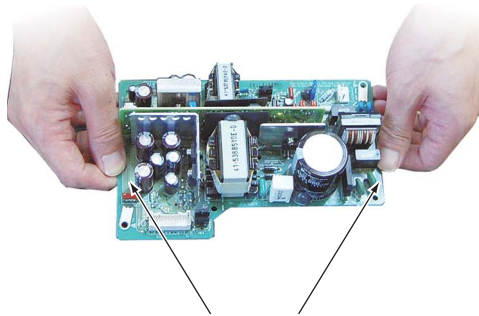


B

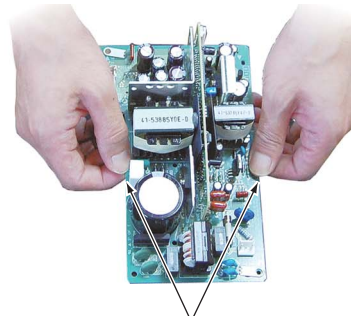
● How to hold the board after removing it from the chassis

C

The following two ways are recommended for holding the POWER SUPPLY Unit:



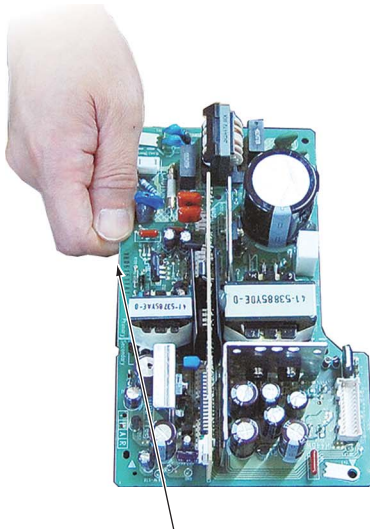
Hold at the center positions of both rims of the board.



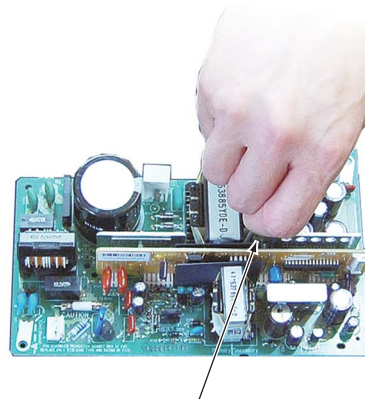
Hold at the center positions of both rims of the board.

D

Ways to be avoided:



NEVER hold a corner of the board with one hand.



NEVER hold the board by the radiator with one hand.

F

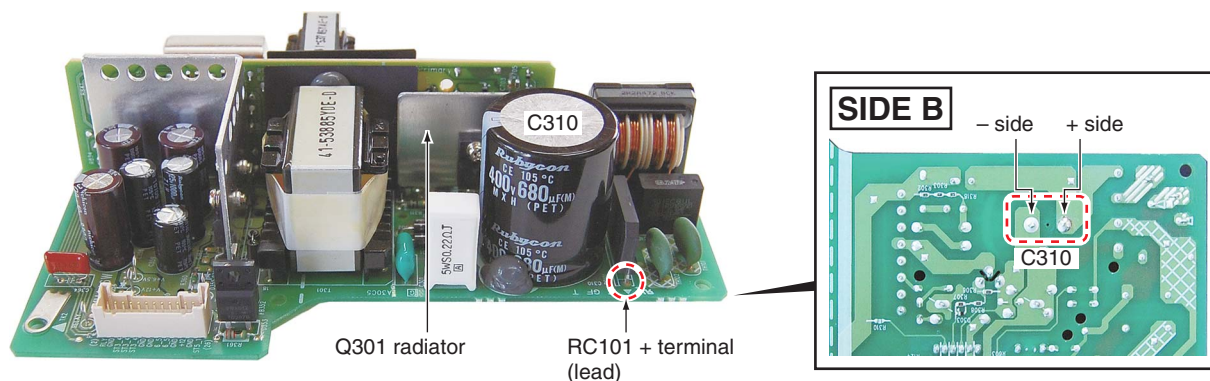
Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup

For 3-5 minutes after the unit is turned off, residual electric charge remains in the C310 capacitor on the POWER SUPPLY Unit. Before removing the POWER SUPPLY Unit from the chassis, be sure to confirm that residual charge inside the POWER SUPPLY Unit has become sufficiently low. (Without forced discharge, residual charge that remains after 3-5 minutes will fall to one-tenth or less, which is still about 20 V. Therefore, even after the POWER SUPPLY Unit is removed, it is recommended to perform forced discharge on the POWER SUPPLY Unit, as shown below.)

For quick removal of residual charge, forced discharge is recommended, using two 220 ohm/10 W resistors (440 ohm/20 W).

How to remove the POWER SUPPLY Unit

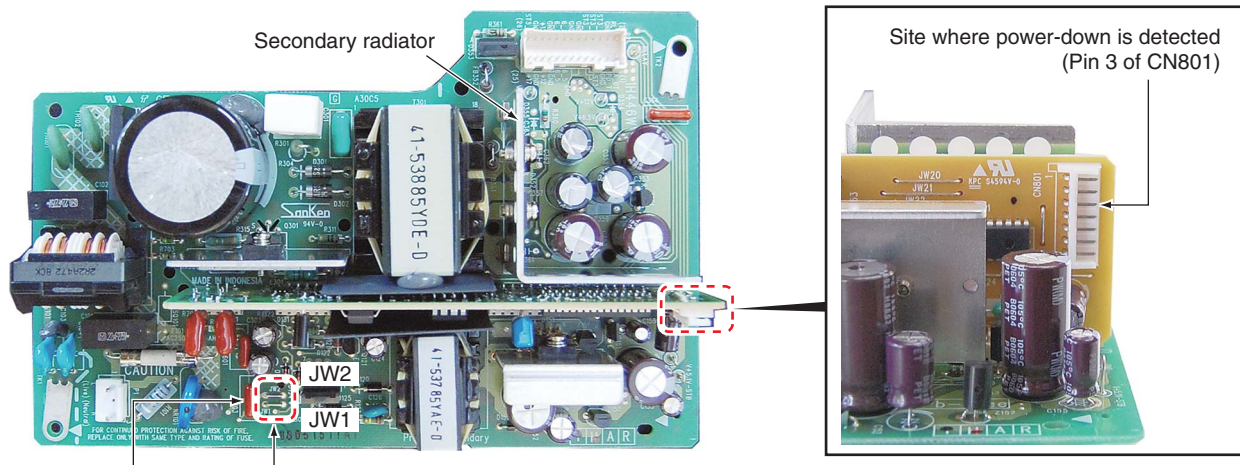
1. Make sure that the AC power cord is unplugged. Using a tester, check the voltage between the + terminal of RC101 bridge diode and Q301 radiator (equivalent to the voltage between two electrodes of C310).
2. Let the unit sit for more than 5 minutes until the voltage equivalent to that between two electrodes of C310 falls to under 20 V.
3. After checking that the voltage is under 20 V, disconnect the connectors of the POWER SUPPLY Unit and remove the POWER SUPPLY Unit.
4. Using two resistors mentioned above, completely discharge residual charge from C310.



After checking that the voltage at the measurement points (equivalent to the voltage between two electrodes of C310) is under 20 V, remove the POWER SUPPLY Unit. Then, completely discharge residual charge, using resistors.

How to reset Standby power latchup (In a case where the protection against Standby power excess voltage is activated)

1. After removing the causes of the malfunction, short-circuit between the JW1 and JW2 jumpers.
2. If the POWER SUPPLY Unit functions properly, after opening the above jumpers, the unit starts up.



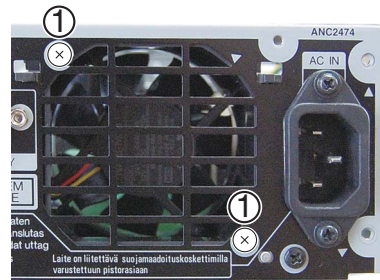
C603

To forcibly reset latchup of STBY3.4 V, short-circuit between JW1 and JW2 (near C603), using a flathead screwdriver or similar object. If the causes of the malfunction are removed, after opening the jumpers, the unit starts up.

3 REAR IO Assy

● FAN unit

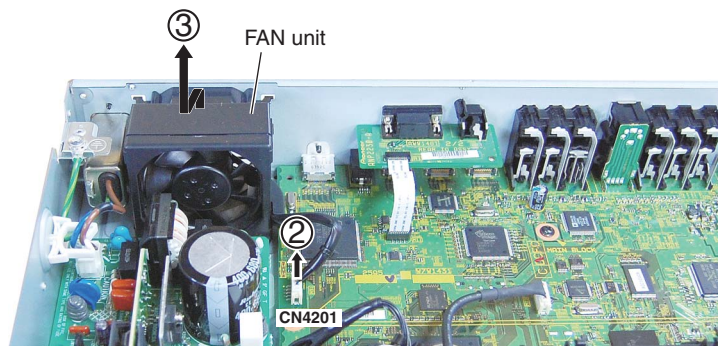
- ① Remove the two screws. (BPZ30P080FTB)



• Rear view

- ② Disconnect the one connector.

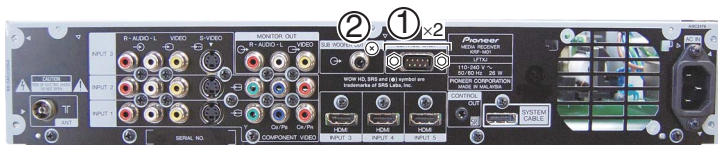
- ③ Remove the FAN unit.



● REAR IO Assy

- ① Remove the two hexagon headed screws. (ABA1382)

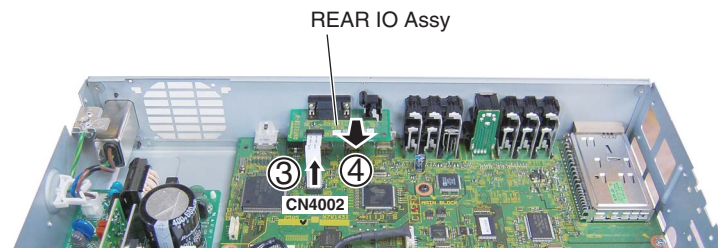
- ② Remove the one screw. (BPZ30P080FTB)



• Rear view

- ③ Disconnect the one flexible cable.

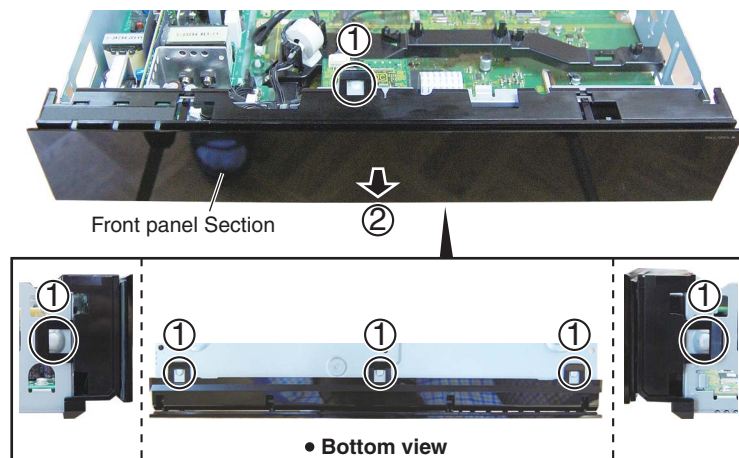
- ④ Remove the REAR IO Assy.



4 Front Panel Section

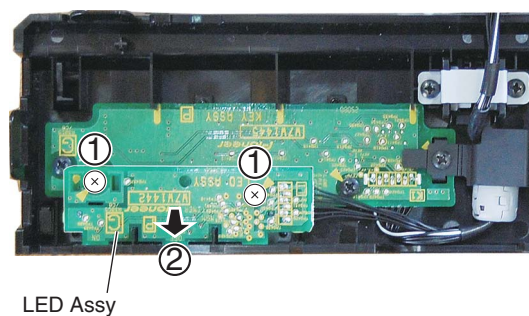
● Front panel Section

- ① Unhook the six hooks.
- ② Remove the front panel Section.



● LED and KEY Assys

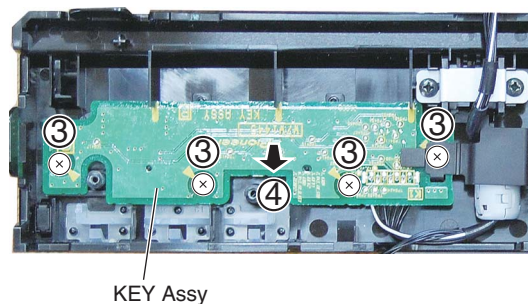
- ① Remove the two screws. (BPZ30P080FTB)
- ② Remove the LED Assy.



- ③ Remove the four screws. (BPZ30P080FTB)
- ④ Remove the KEY Assy.

Note:

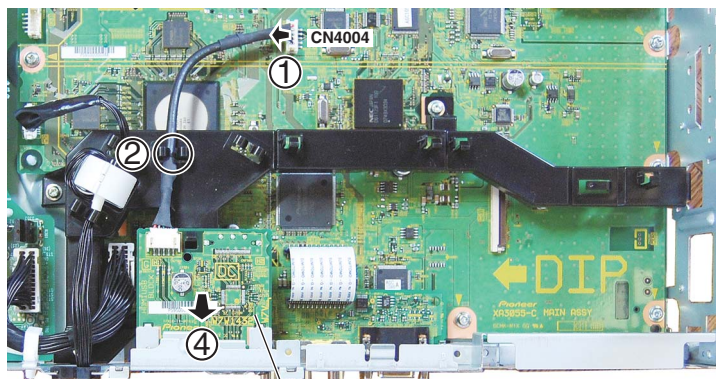
Before tightening screws, make sure that the protect film has been attached.
(For details on the place at which the protect film is to be attached, see "■ Preparations.")



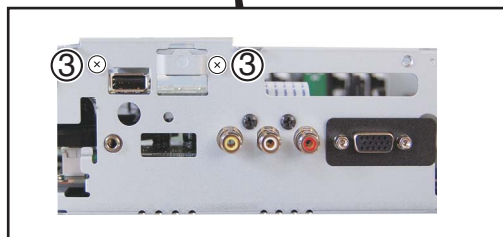
A

5 FRONT_HDM_USB Assy

- ① Disconnect the one connector.
- ② Release the jumper wire.
- ③ Remove the two screws. (BBZ30P060FTB)
- ④ Remove the FRONT_HDM_USB Assy.



FRONT_HDM_USB Assy



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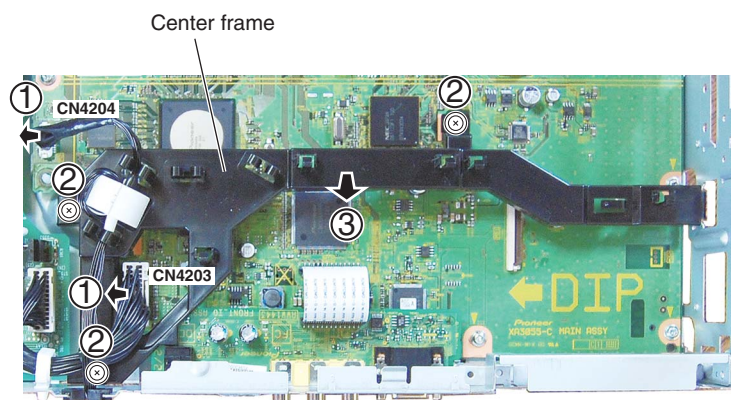
F



6 FRONT IO Assy

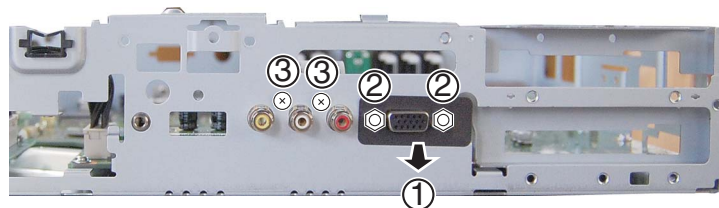
● Center frame

- ① Disconnect the two connectors.
- ② Remove the three screws. (ABA1383)
- ③ Remove the center frame.

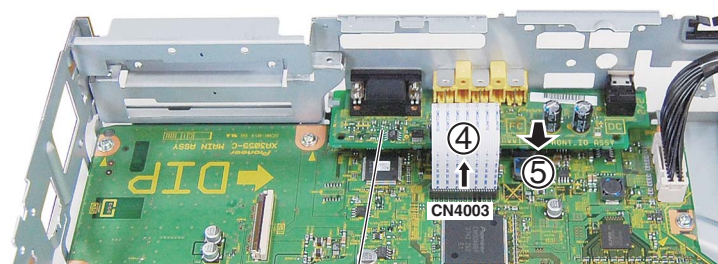


● FRONT IO Assy

- ① Remove the cover sheet.
- ② Remove the two hexagon headed screws. (ABA1382)
- ③ Remove the two screws. (BPZ30P080FTB)



- ④ Disconnect the one flexible cable.
- ⑤ Remove the FRONT IO Assy.

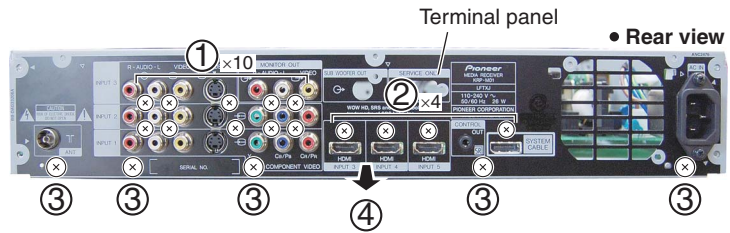


FRONT IO Assy

7 MAIN BLOCK Assy

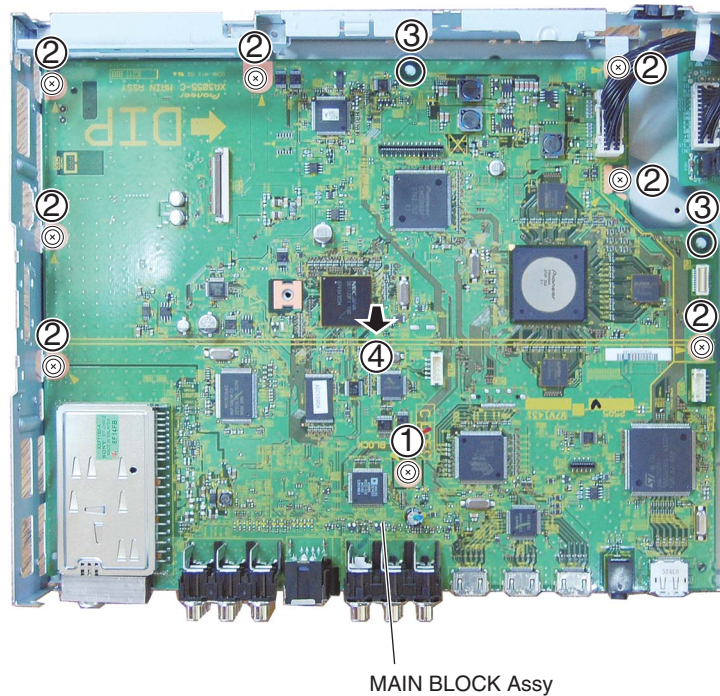
● Terminal panel

- ① Remove the 10 screws. (BPZ30P080FTB)
- ② Remove the four screws. (BMZ30P060FTB)
- ③ Remove the five screws. (BBZ30P060FTB)
- ④ Remove the terminal panel.



● MAIN BLOCK Assy

- ① Remove the one screw. (AMZ30P060FTB)
- ② Remove the seven screws. (ABA1383)
- ③ Remove the two circuit board spacers.
- ④ Remove the MAIN BLOCK Assy.



6. EACH SETTING AND ADJUSTMENT

The following items in the service manual of KRP-M01/WYSIXK5 are not applicable to this model.

HOW TO UPDATE USB

HOW TO UPDATE DISPLAY PORT FIRMWARE



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

6.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	No adjustment required
MAIN BLOCK Assy (*)	➡	Execute section [5-4] AUTO ADJUSTMENT of 4.2 [5] INITIALIZE.
Other assemblies	➡	No adjustment required

(*) : When replacing the MAIN BLOCK Assy, be sure to perform the FINAL SETUP.

■ Replacement of the whole Assy is required when one of the following part on the corresponding Assy is in failure

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AWW1431	MAIN BLOCK Assy	IC5002	HDCP EEPROM	BR24L02FV-W	Because adjustments and data writing at the level of production line are required after replacement
		IC5003	HDCP EEPROM	BR24L02FV-W	
		IC5004	HDCP EEPROM	BR24L02FV-W	
		IC7004	EMMA2 EEPROM	BR24L64F-W	
		IC6701	Flash ROM	AGC1091	
		IC6811	IF UCOM	AGC1086	
		IC7202	Flash ROM	AGC1090	
AWW1443	FRONT IO Assy	IC8501	PC EEPROM	BR24L01AFJ-W	Because adjustments and data writing at the level of production line are required after replacement

A

■ Part whose replacement is difficult

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AXY1223	POWER SUPPLY Unit	U0003	—	—	The maker forbids Pioneer from repairing the Assy.
AWW1431	MAIN BLOCK Assy	IC7003	SYSTEM IC (EMMA2)	UPD61123F1-100KA3A-K	Because these ICs are packaged in BGA
		IC6501	ASIC (ARIA)	PD6568A-K	
		IC6702	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6703	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6704	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC4801	ADC	AD9985KSTZ	Because these ICs require readjustment after replacement
		IC5101	AV SW	R2S11006FT	
		IC5501	RGB SW	R2S11001FT	
		IC4702	VDEC	CM0048BF	
		IC4901	HDMI	SII9135CTU-K	Because a radiation pad is provided
		IC4601	Regulator	LTC3407EMSE-2	

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■ Adjustment Procedures After a Part that Requires Readjustment is Replaced

Execute section [5-4] AUTO ADJUST. <=> of 4.2 [5] INITIALIZE.

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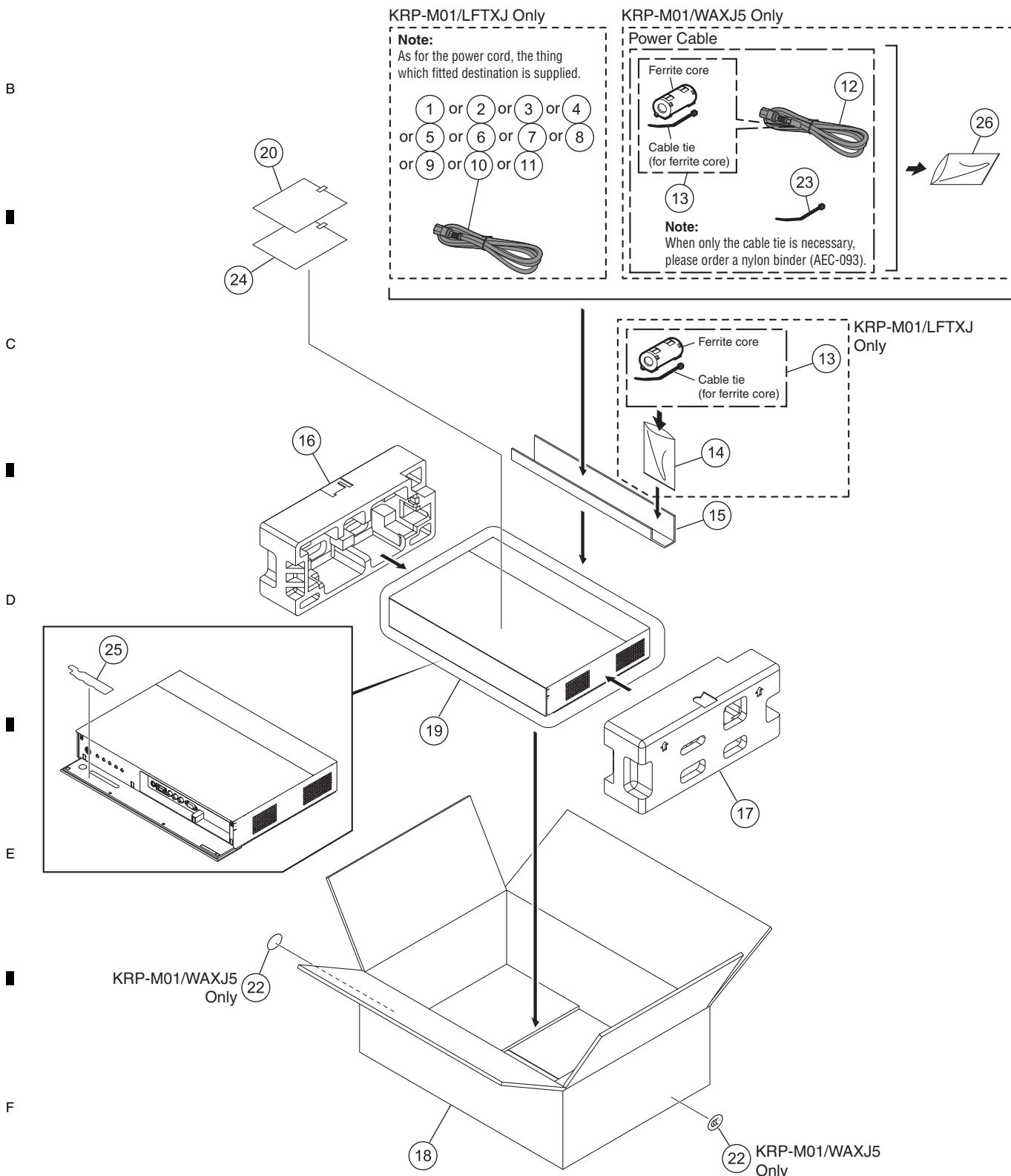
KRP-M01

7. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.

- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Screws adjacent to ▼ mark on product are used for disassembly.
- For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

7.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
⚠ NSP 1	Power Cord	See Contrast table (2)	16	Pad L (G)	AHA2739
⚠ NSP 2	Power Cord	See Contrast table (2)	17	Pad R (G)	AHA2740
⚠ NSP 3	Power Cord	See Contrast table (2)	18	Carton	See Contrast table (2)
⚠ NSP 4	Power Cord	See Contrast table (2)	19	Mirror Mat	AHG1420
⚠ NSP 5	Power Cord	See Contrast table (2)	20	Caution Card	See Contrast table (2)
⚠ NSP 6	Power Cord	See Contrast table (2)	21	•••••	
⚠ NSP 7	Power Cord	See Contrast table (2)	NSP 22	CCC S&E Label	See Contrast table (2)
⚠ NSP 8	Power Cord	See Contrast table (2)	23	Nylon Binder	See Contrast table (2)
⚠ NSP 9	Power Cord	See Contrast table (2)	24	Film Caution Card	See Contrast table (2)
⚠ NSP 10	Power Cord Assy	See Contrast table (2)	25	Protect Film	GGP1121
⚠ 11	Power Cord Set	See Contrast table (2)	26	Vinyl Bag	See Contrast table (2)
⚠ 12	Power Cord	See Contrast table (2)			
⚠ 13	Ferrite Core (L5208)	ATX1039			
14	Polyethylene Bag	See Contrast table (2)			
15	ACC Carton (G)	AHD3679			

(2) CONTRAST TABLE

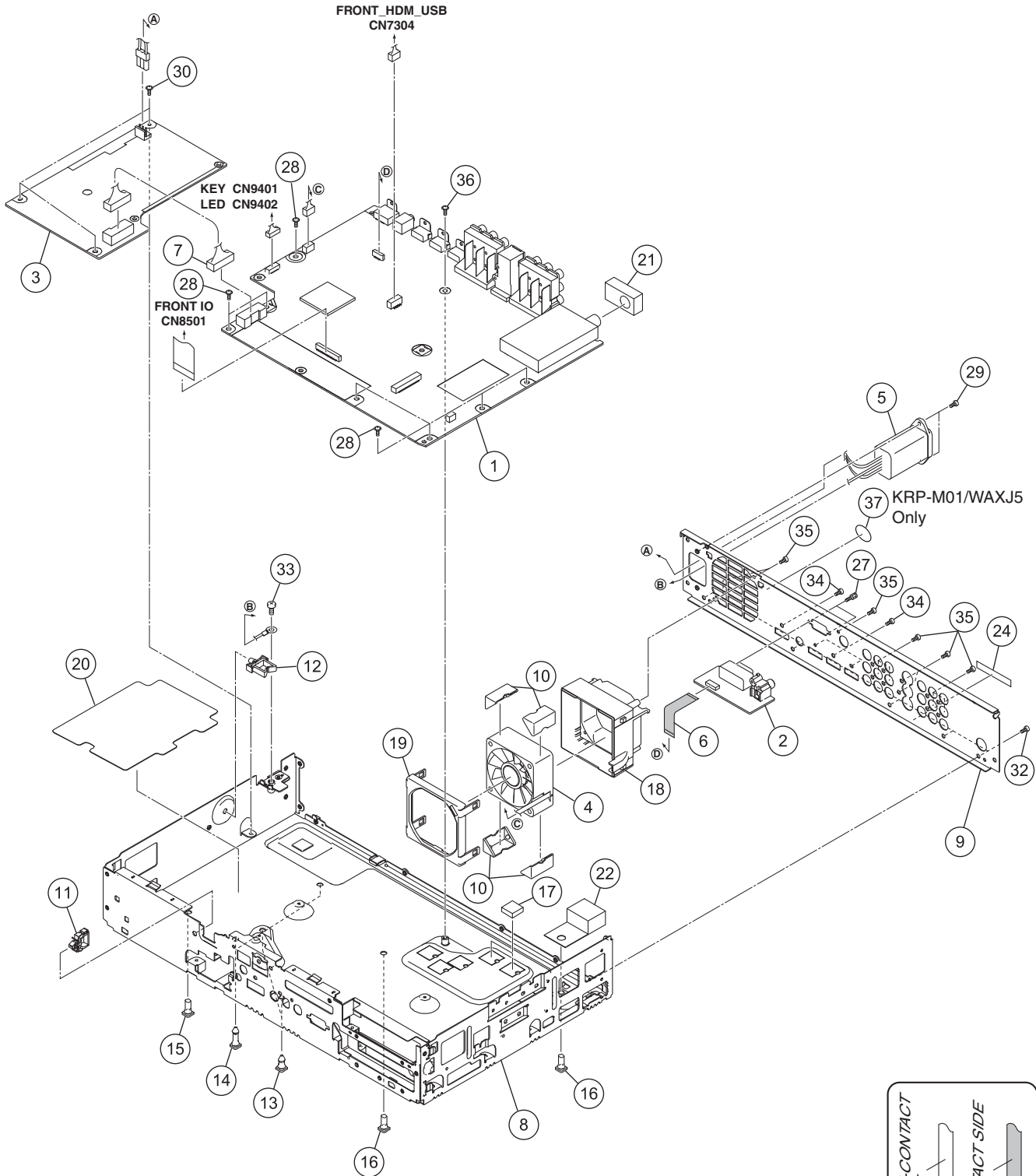
KRP-M01/LFTXJ and WAXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/LFTXJ	KRP-M01/WAXJ5
⚠ NSP	1	Power Cord	ADG1232	Not used
⚠ NSP	2	Power Cord	ADG1234	Not used
⚠ NSP	3	Power Cord	ADG1236	Not used
⚠ NSP	4	Power Cord	ADG1239	Not used
⚠ NSP	5	Power Cord	ADG1241	Not used
⚠ NSP	6	Power Cord	ADG1243	Not used
⚠ NSP	7	Power Cord	ADG1244	Not used
⚠ NSP	8	Power Cord	ADG1246	Not used
⚠ NSP	9	Power Cord	ADG1251	Not used
⚠ NSP	10	Power Cord Assy	AWX1095	Not used
⚠	11	Power Cord Set	AXY1194	Not used
⚠	12	Power Cord	Not used	ADG1209
	14	Polyethylene Bag	AHG1433	Not used
	18	Carton (G)	AHD3676	Not used
	18	Carton (C)	Not used	AHD3685
	20	Caution Card	ARM1444	ARM1446
NSP	22	CCC S&E Label	Not used	DRW2310
	23	Nylon Binder	Not used	AEC-093
	24	Film Caution Card	ARM1449	ARM1451
	26	Vinyl Bag	Not used	AHG1336

7.3 BOTTOM SECTION



Cleaning paper :
GED-008



(1) BOTTOM SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
	1 MAIN BLOCK Assy	AWW1431	⚠ 21	Gasket GE	ANK1984
	2 REAR IO Assy	AWW1461	⚠ 22	Gasket GE2	ANK1986
⚠ 3	POWER SUPPLY Unit	AXY1223	23	•••••	
⚠ 4	DC FAN Motor 60 x 25L	AXM1068	NSP 24	Serial Label	ARW1100
⚠ 5	AC Inlet (CN1)	AKP1339	25	•••••	
	6 Flexible Cable (J207)	ADD1568	26	•••••	
	7 26P Housing Wire (J111)	ADX3674	27	Hexagon Headed Screw	ABA1382
	8 Base Chassis Assy	ANA2225	28	Screw	ABA1383
	9 Terminal Panel	See Contrast table (2)	29	Screw	ABZ30P080FTB
	10 Floating Rubber 60	AEB1410	30	Screw	BBB30P080FSN
	11 Reuse Clamp	AEC2129	31	•••••	
	12 Reuse Wire Saddle	AEC2134	32	Screw	BBZ30P060FTB
	13 Circuit Board Spacer	AEC2150	33	Screw	BMP40P080FSN
	14 Circuit Board Spacer	AEC2151	34	Screw	BMZ30P060FTB
	15 Circuit Board Spacer	AEC2152	35	Screw	BPZ30P080FTB
	16 Circuit Board Spacer	AEC2163	36	Screw	AMZ30P060FTB
	17 Silicon Sheet	AEH1182	NSP 37	CCC S&E Label	See Contrast table (2)
	18 FAN Holder 60 A	AMR3918			
	19 FAN Holder 60 B	AMR3919			
	20 Insulation Sheet	AMR3891			

(2) CONTRAST TABLE

KRP-M01/LFTXJ and WAXJ5 are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>KRP-M01/LFTXJ</u>	<u>KRP-M01/WAXJ5</u>
	9	Terminal Panel (G)	ANC2476	Not used
	9	Terminal Panel (C)	Not used	ANC2477
NSP	37	CCC S&E Label	Not used	DRW2310

1 2 3 4

7.4 FRONT PANEL SECTION

A

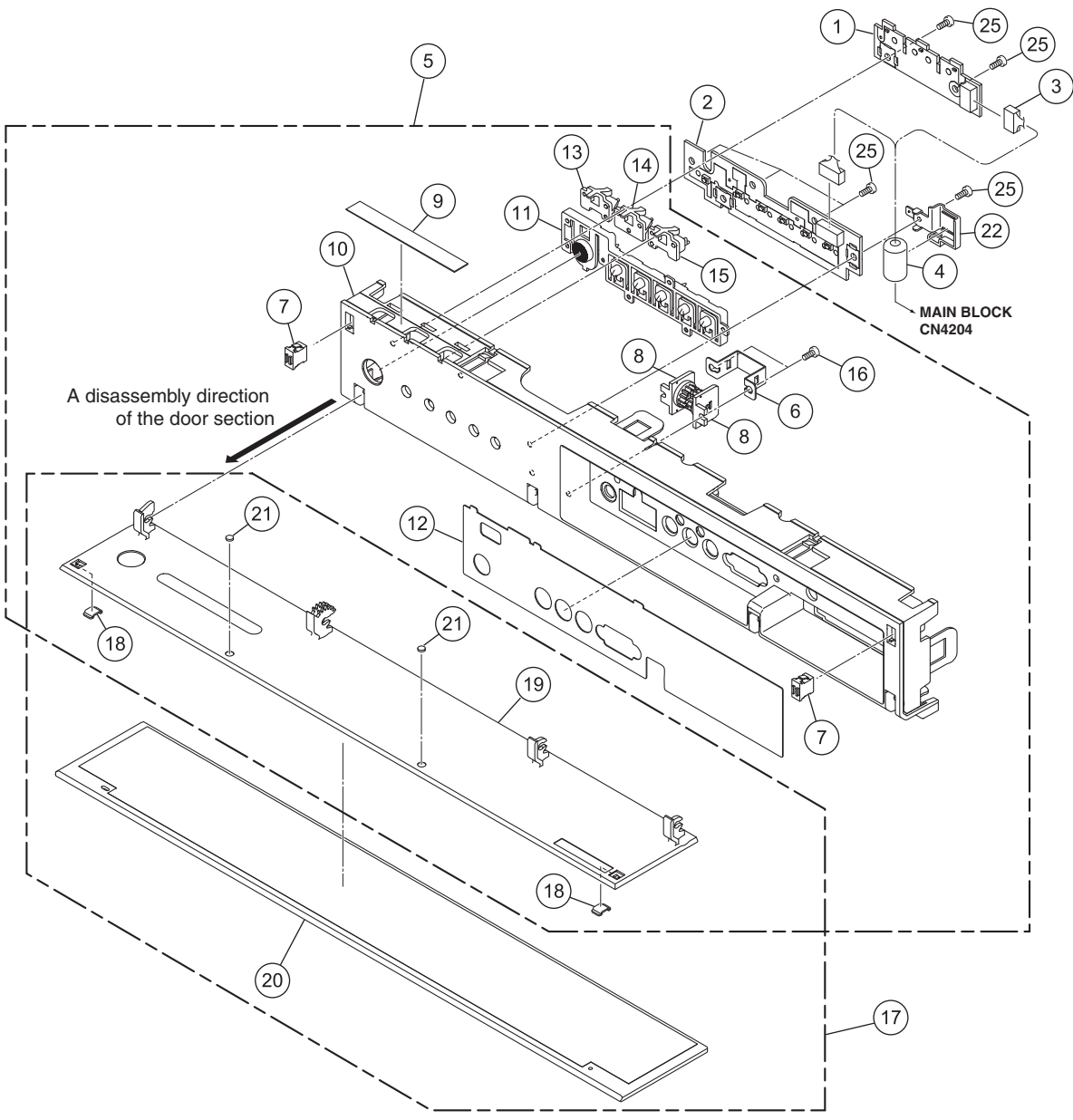
B

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■ When Replacing the F PANEL Assy (E)

When replacing the F PANEL Assy (E), discard the following parts of the new Assy kit for service and use the parts from the original door panel:

No.18	Door catcher
No.19	Door base
No.21	Door cushion

B

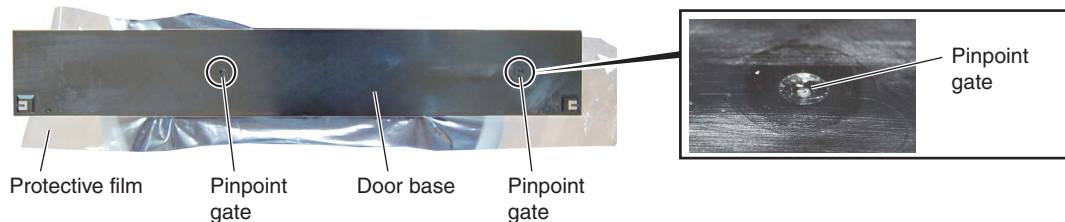
■ Reassembly Procedures for the Door Panel Service Kit

• Component parts of the GXX1283 Door Panel Service Kit

No.18	Door catcher (x2)
No.19	Door base (x1)
No.20	Door panel (x1)
No.21	Door cushion (x2)

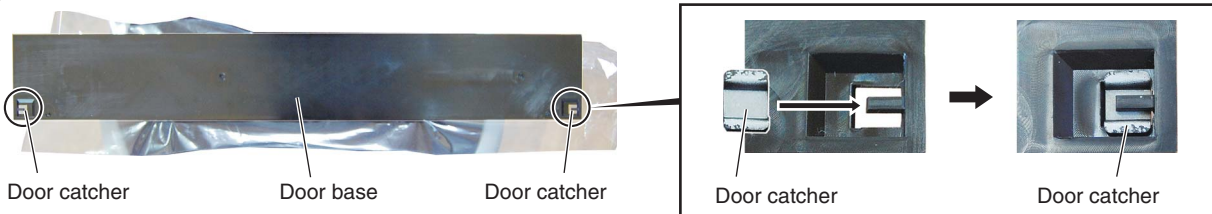
C

- ① Check that two marks of pinpoint gates do not protrude from the surface of the door base to which the door panel is to be attached.
Do NOT peel off the protective film of the door base in this step.
Peel it off after all the reassembly procedures are completed.



D

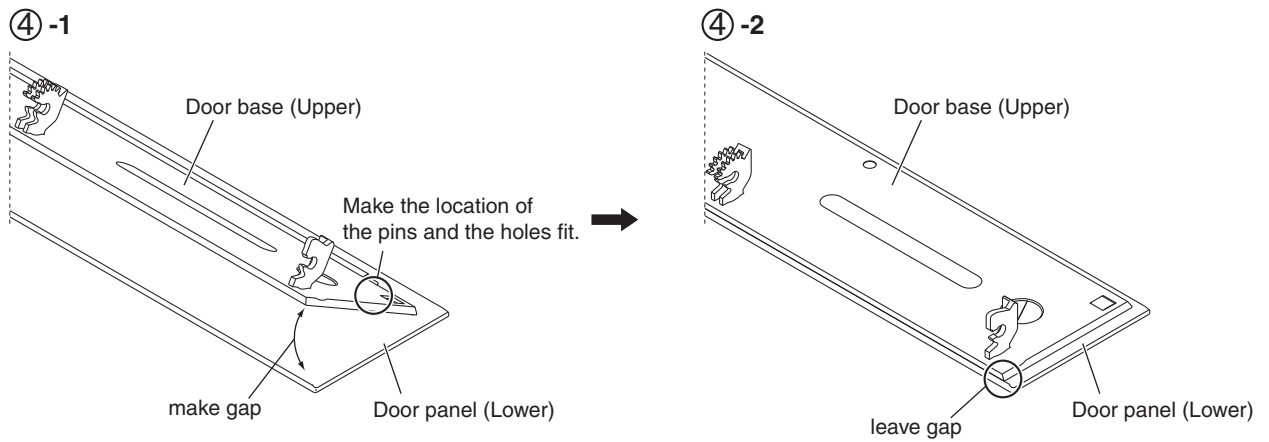
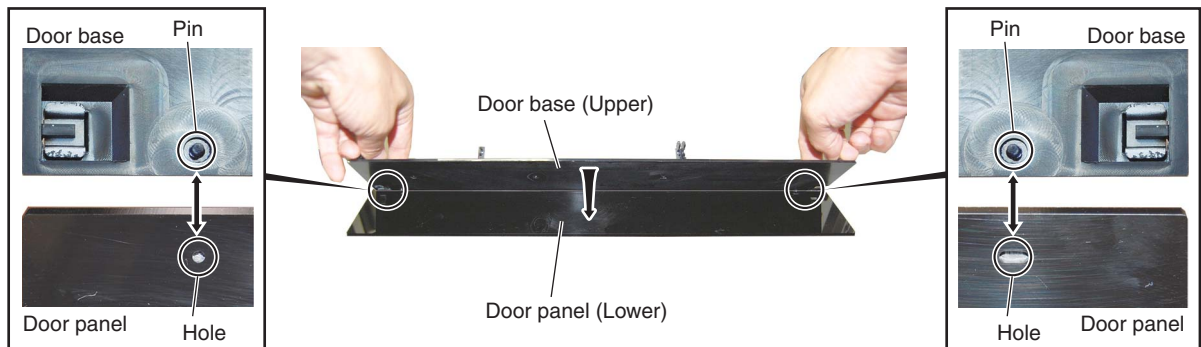
- ② Attach the two door catchers.



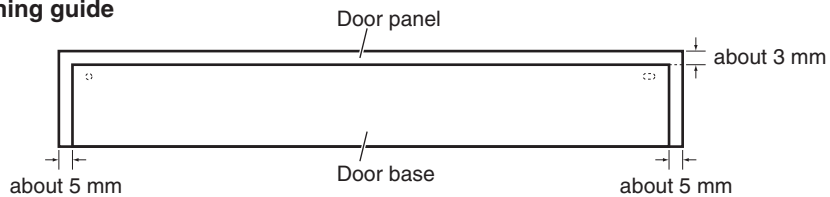
E

F

- ④ Align the two positioning pins of the door base with the holes in the door panel.
When positioning, leave gaps between the door panel and door base, as shown in the figure below:



Positioning guide

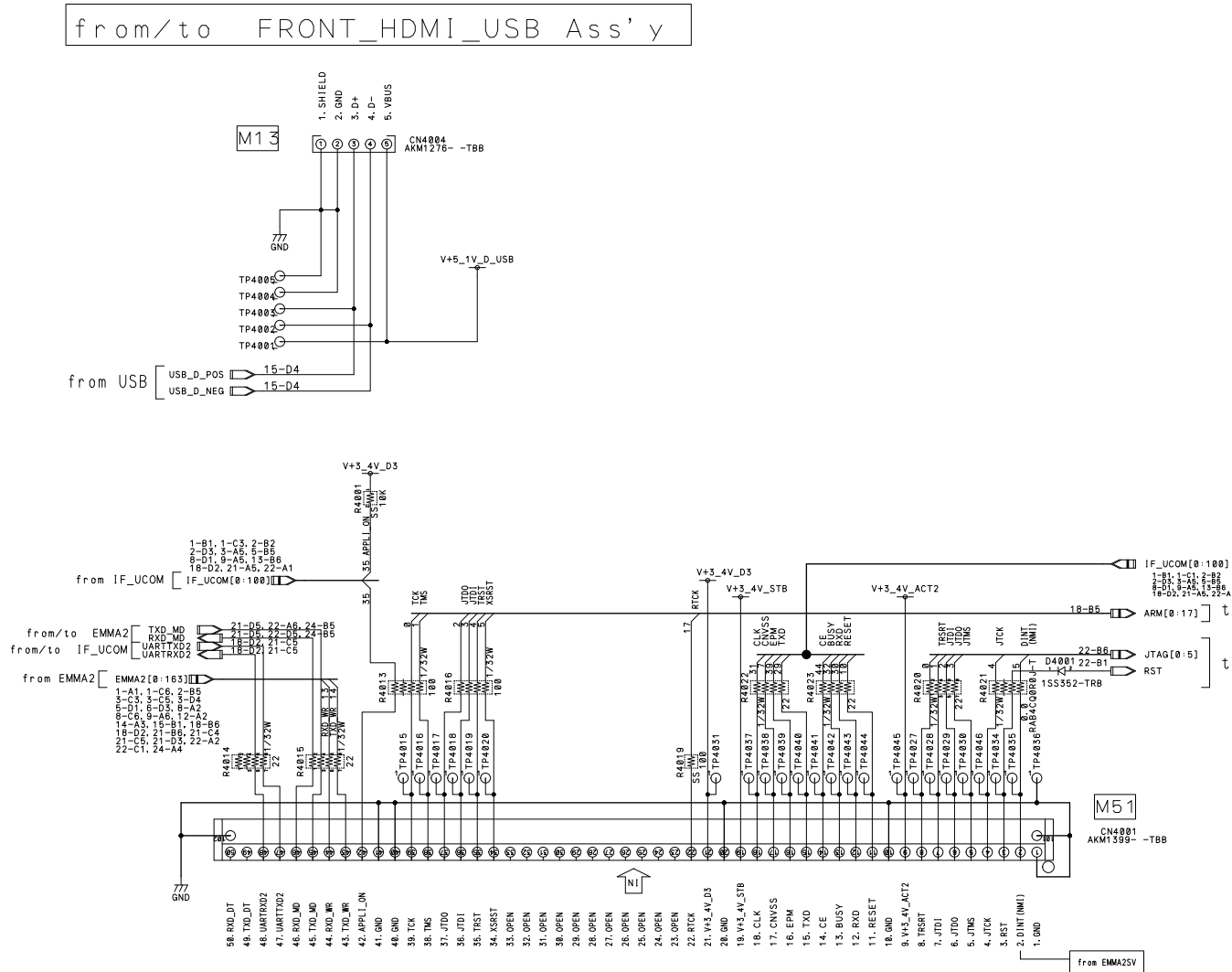
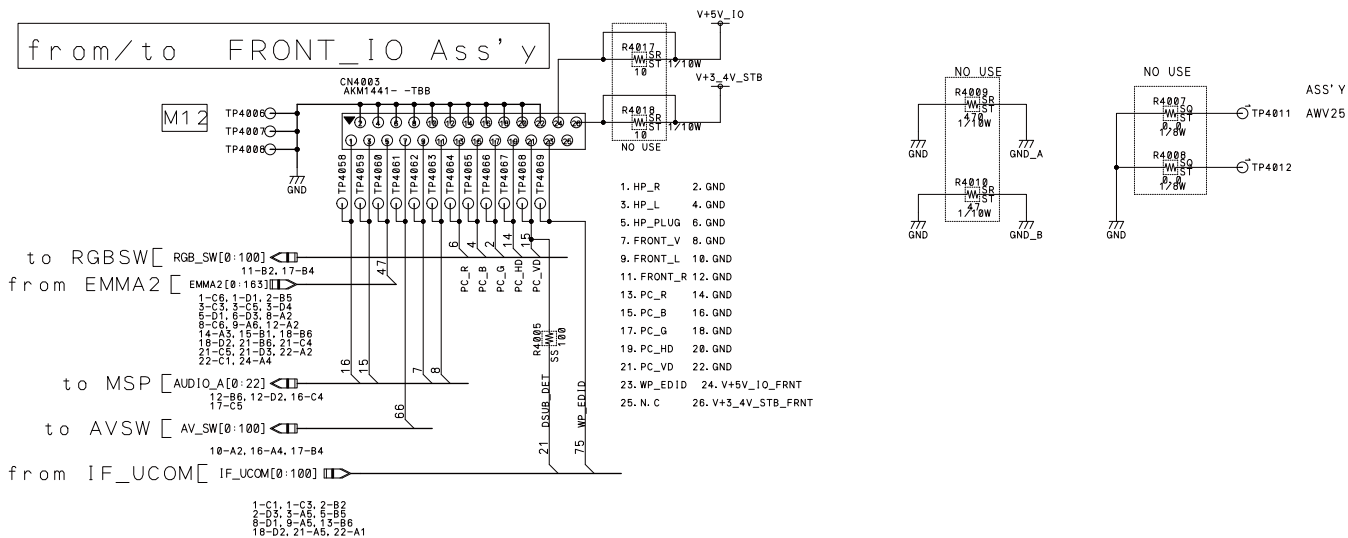


- ⑤ Stick the door base and door panel together, by pressing them all over.

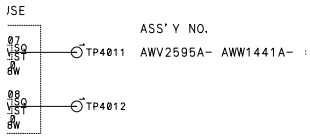
- ⑥ Attach the two door cushions.

4

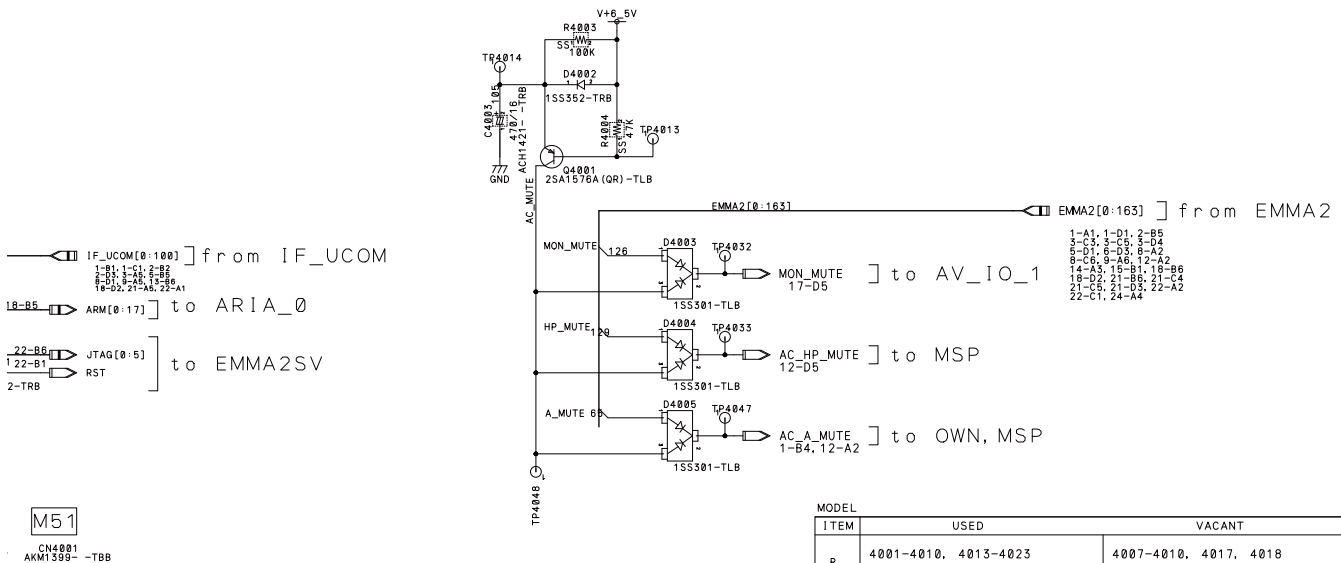
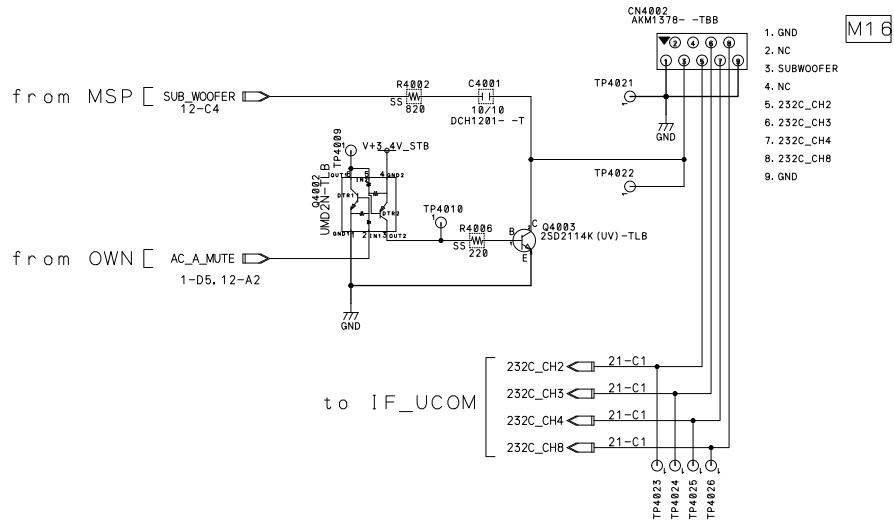
F



from/to EMMA/ARIA JIGU Board



from/to REAR_IOAss'y



MODEL	USED	VACANT
ITEM		
R	4001-4010, 4013-4023	4007-4010, 4017, 4018
C	4001, 4003	
Q	4001-4003	
D	4001-4005	
CN	4001-4004	

from EMMA2SV

MAIN ASSY (MR_IBD) (01/25)
BOARD_IF_0 BLOCK

AWV2595- : AWW1431

4

8.3 MAIN BLOCK ASSY (3/24) [POWER_0 BLOCK]

A

B

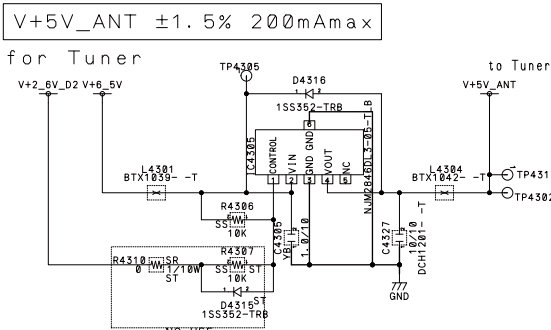
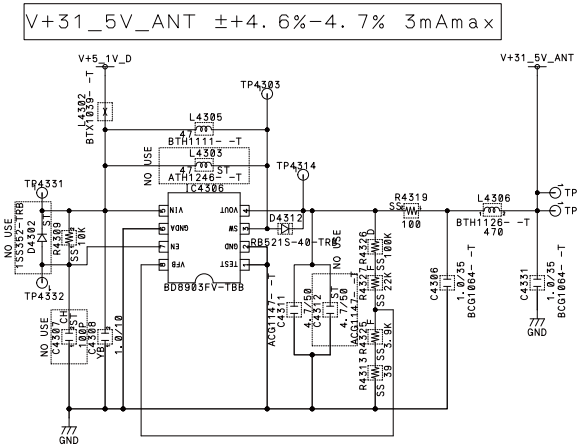
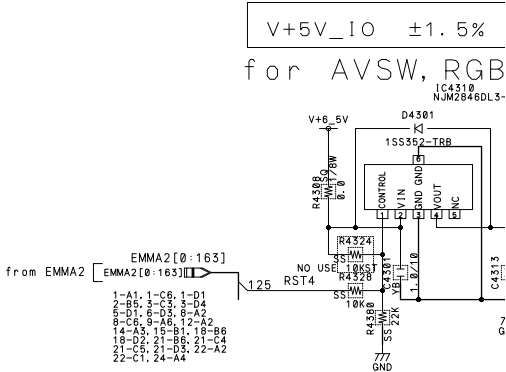
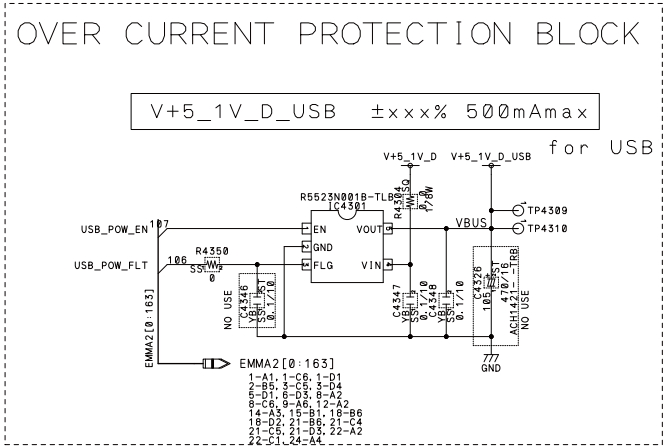
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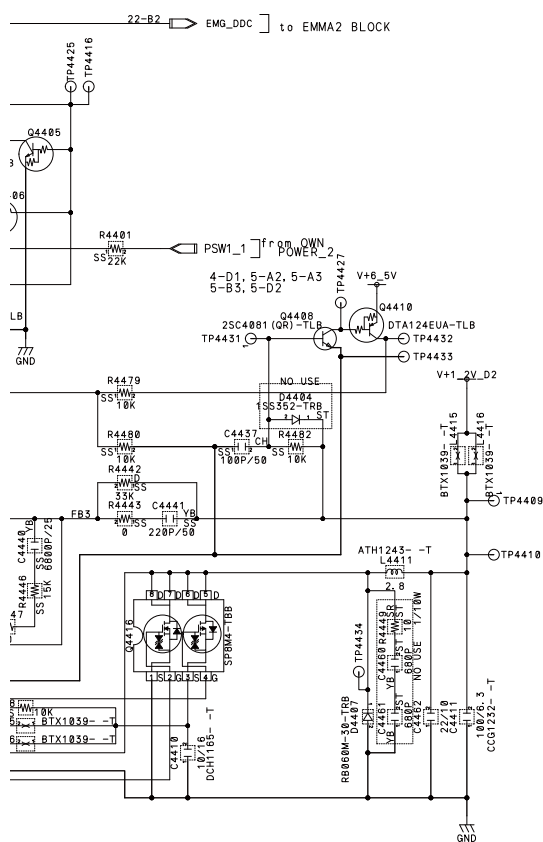
MODEL	ITEM	USED
R	4303-4310, 4313, 4316, 4	4319, 4324-4328, 4339-43
	4310-4318, 4324-4328, 4339-43	4310-4318, 4324-4328, 4339-43
C	4301, 4303-4313, 4315, 4	4326, 4327, 4331, 4342,
	4346-4348, 4350-4352	4346-4348, 4350-4352
Q	4303, 4307	
IC	4301-4303, 4305, 4306,	4306-4310
	4306-4310	
L	4301-4306	
D	4301, 4302, 4304-4306, 4	4312, 4315, 4316
	4312, 4315, 4316	
CN	4201-4204	

4

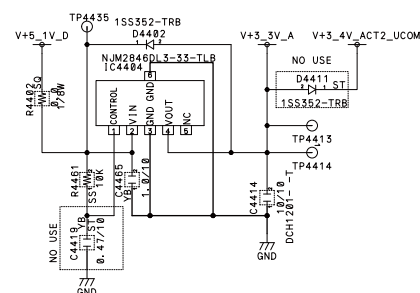
F

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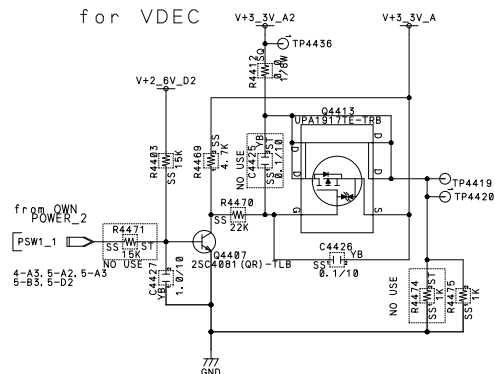
The Δ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.



V+3_3V_A $\pm 1.5\%$ 330mAmax
for ADC, VDEC



V+3_3V_A2 $+1\%$, -1.4% 150mAmax
for VDEC



USED	VACANT
31-4410, 4412, 4417, 4420- 31, 4461, 4469-4471, 4474, 15, 4479-4482	4404, 4422, 4423, 4437, 4449, 4471, 4474, 4481
31, 4403-4407, 4409-4411, 4, 4415, 4419, 4425-4427, 15-4441, 4445-4468	4415, 4419, 4425, 4445, 4446, 4449, 4450, 4453, 4456, 4459- 4461
14-4410, 4413, 4416-4418	
12, 4404	
31-4406, 4409-4411, 4413- 16	
31-4408, 4410, 4411	4401, 4403, 4404, 4408, 4410, 4411
31-4204	

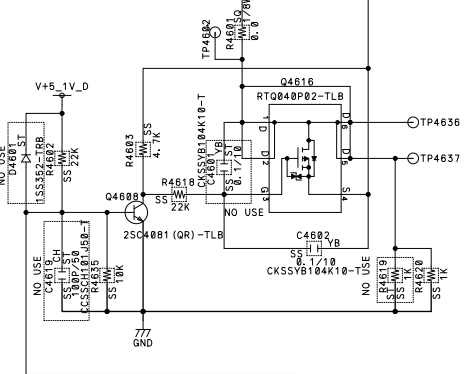
MAIN ASSY (MR_1BD) (04/25)
POWER_1 BLOCK

AWV2595- : AWW1431

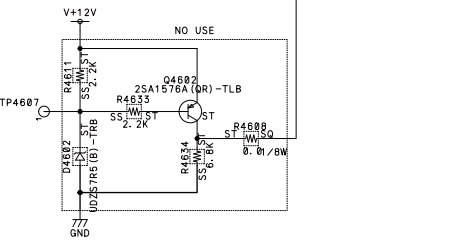
8.5 MAIN BLOCK ASSY (5/24) [POWER_2 BLOCK]

A

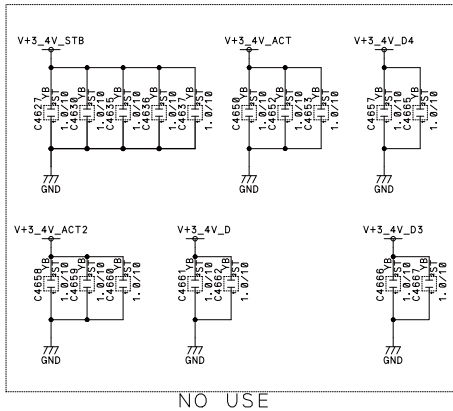
V+3_4V_D +3. 5%, -4. 4% 120mAmax
for ADC, MSP



B

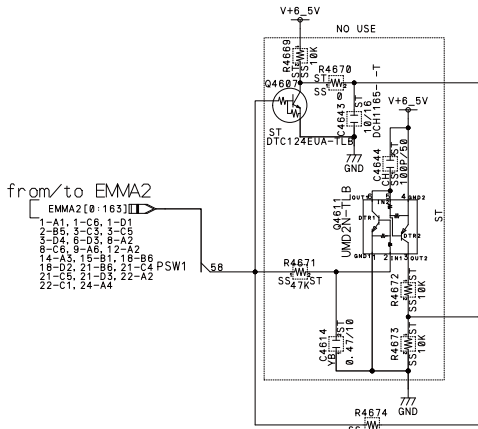


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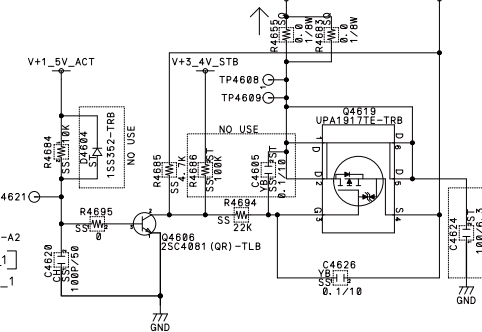
CONTROL BLOCK



E

V+3_4V_ACT3 +3. 5%, -5% 460mAmax

for Mod, DP



F

The Δ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

KRP-M01

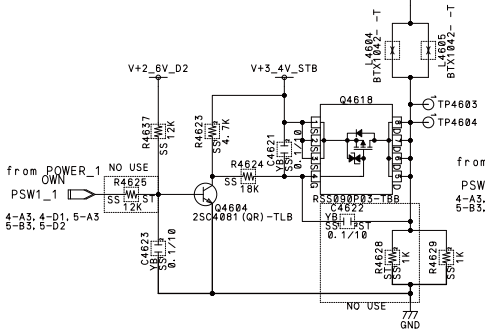
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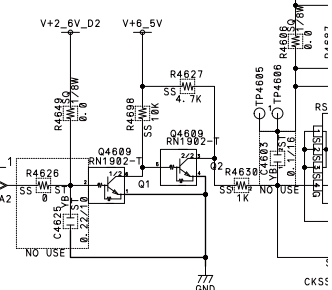
V+3_4V_D3 +3. 5%, -6. 4% 930mAmax

for VDEC, HDMI, ARIA



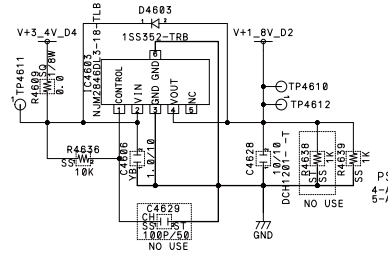
V+3_4V_D4 +3. 5%, -8%

for VDEC, HDMI



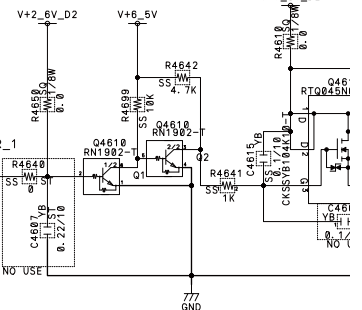
V+1_8V_D2 $\pm 1. 5\%$ 520mAmax

for VDEC, HDMI



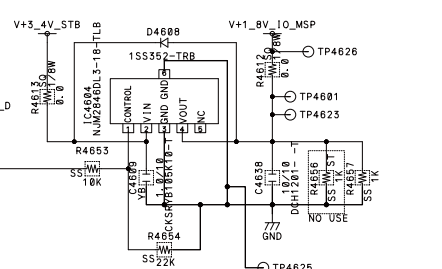
V+1_8V_D3 +1%, -1. 4% 1

for VDEC



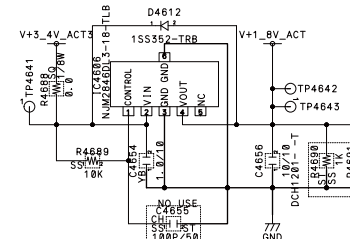
V+1_8V_IO_MSP $\pm 1. 5\%$ 420mAmax

for MSP



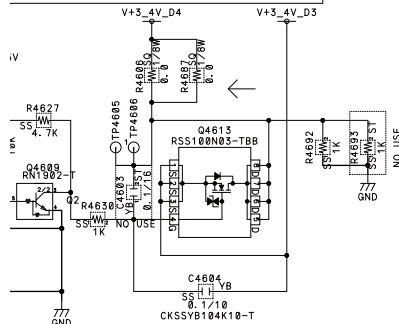
V+1_8V_ACT $\pm 1. 5\%$ 440mAmax

for DP

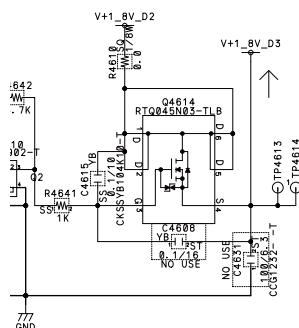


MODEL	ITEM	USED
R	4601-4604, 4606-4620, 4623-4695, 4698-4700	
	4601-4662, 4665-4667	
Q	4601-4619	
	4601, 4603, 4604, 4606	
L	4601-4605	
	4601-4606, 4608-4610, 461	

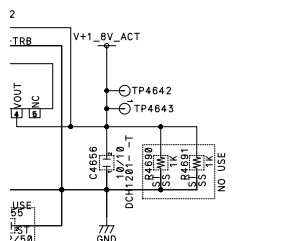
+3.5%, -8% 820mAmax



+1%, -1.4% 160mAmax



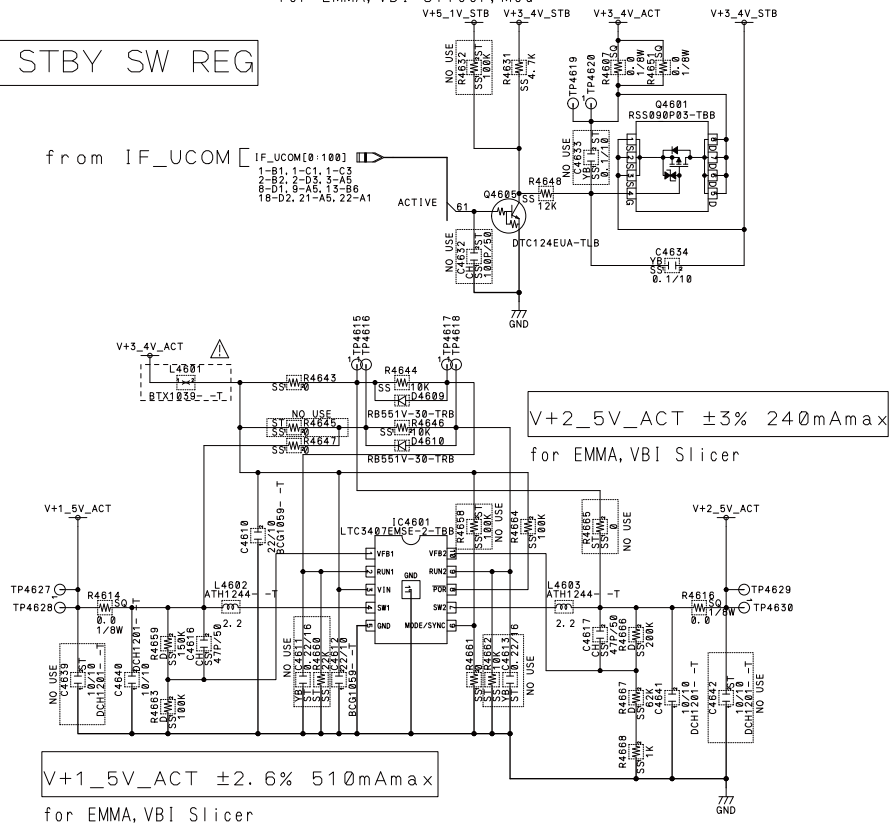
±1.5% 440mAmax



STBY SW REG

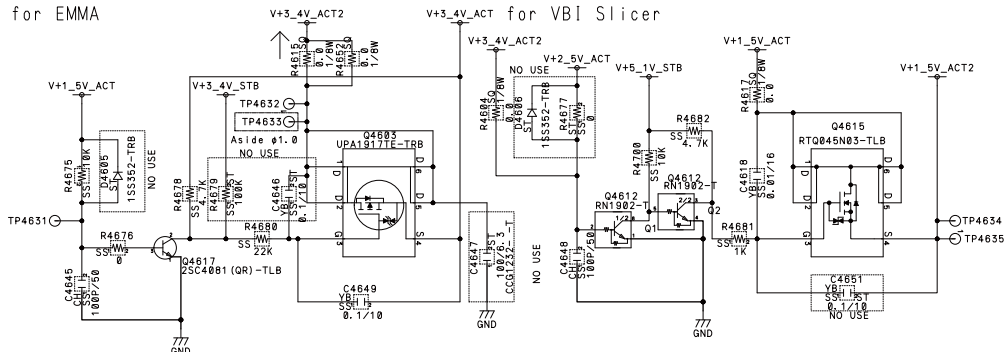
from IF_UCOM [IF_UCOM[0:100]
1-B1, 1-C1, 1-C3
2-D2, 2-D3, 2-A6
3-A6, 3-A6B
1B-D2, 21-A5, 22-A1

V+3_4V_ACT +3.5%/-4.5% 980mAmax
for EMMA, VBI Slicer, Mod



V+3_4V_ACT2 +3.5%, -5% 25mAmax
for EMMA

V+1_5V_ACT2 +2.6%, -2.7% 23mAmax



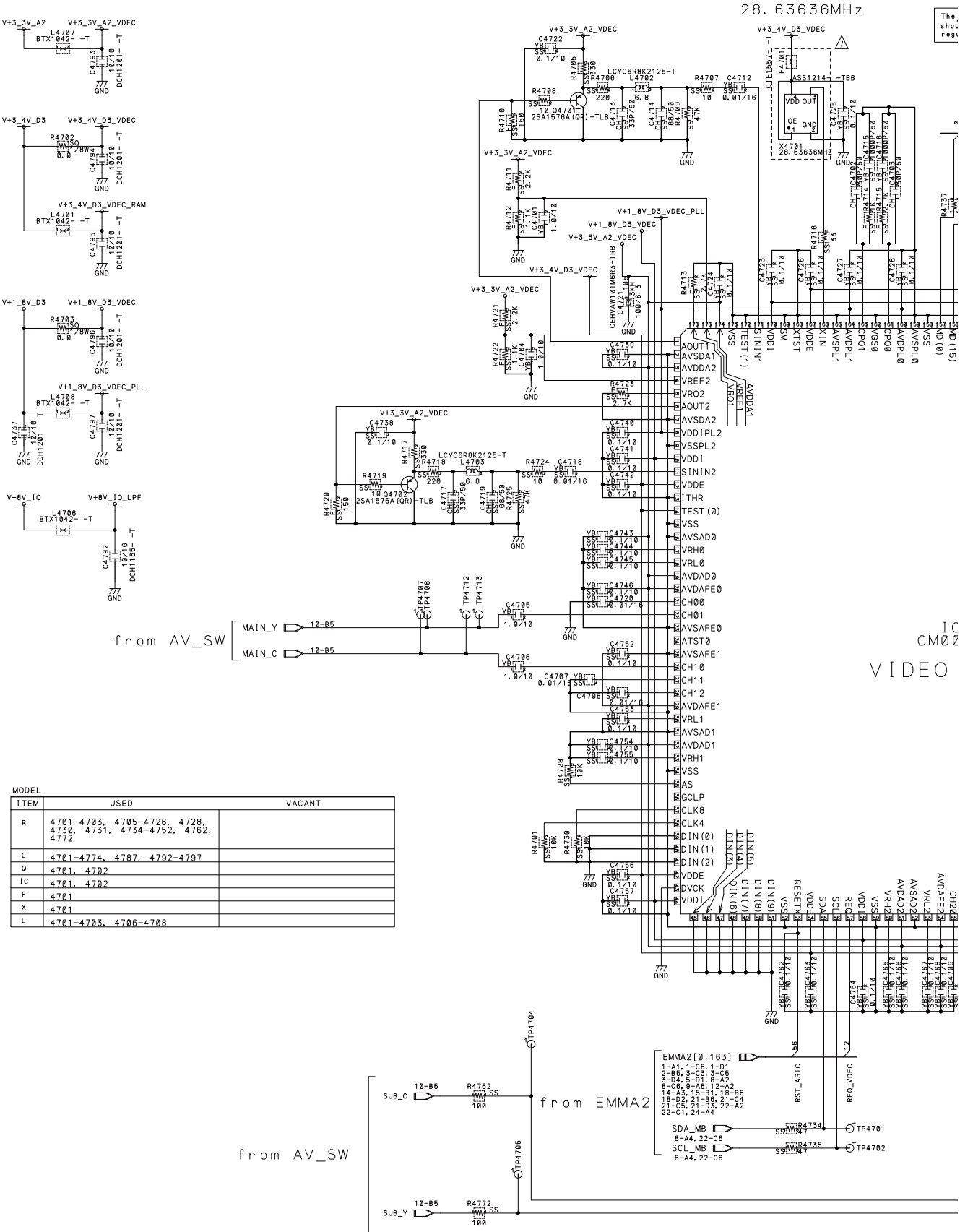
USED	VACANT
-4604, 4606-4620, 4695, 4698-4700	4608, 4611, 4619, 4625, 4626, 4628, 4632-4634, 4638, 4640, 4645, 4656, 4658, 4660, 4662, 4665, 4669-4673, 4677, 4679, 4686, 4690, 4691, 4693
-4662, 4665-4667	4601, 4603, 4605, 4607, 4608, 4611, 4613, 4614, 4619, 4622, 4624, 4625, 4627, 4629-4633, 4635-4637, 4639, 4643-4644, 4646, 4647, 4650-4653, 4657- 4662, 4665-4667
-4619	4602, 4607, 4611
-4603, 4604, 4606	
-4605	
-4606, 4608-4610, 4612	4601, 4602, 4604-4606

MAIN ASSY (MR_1BD) (05/25)
POWER_2 BLOCK

AWV2595- : AWW1431

1 2 3 4

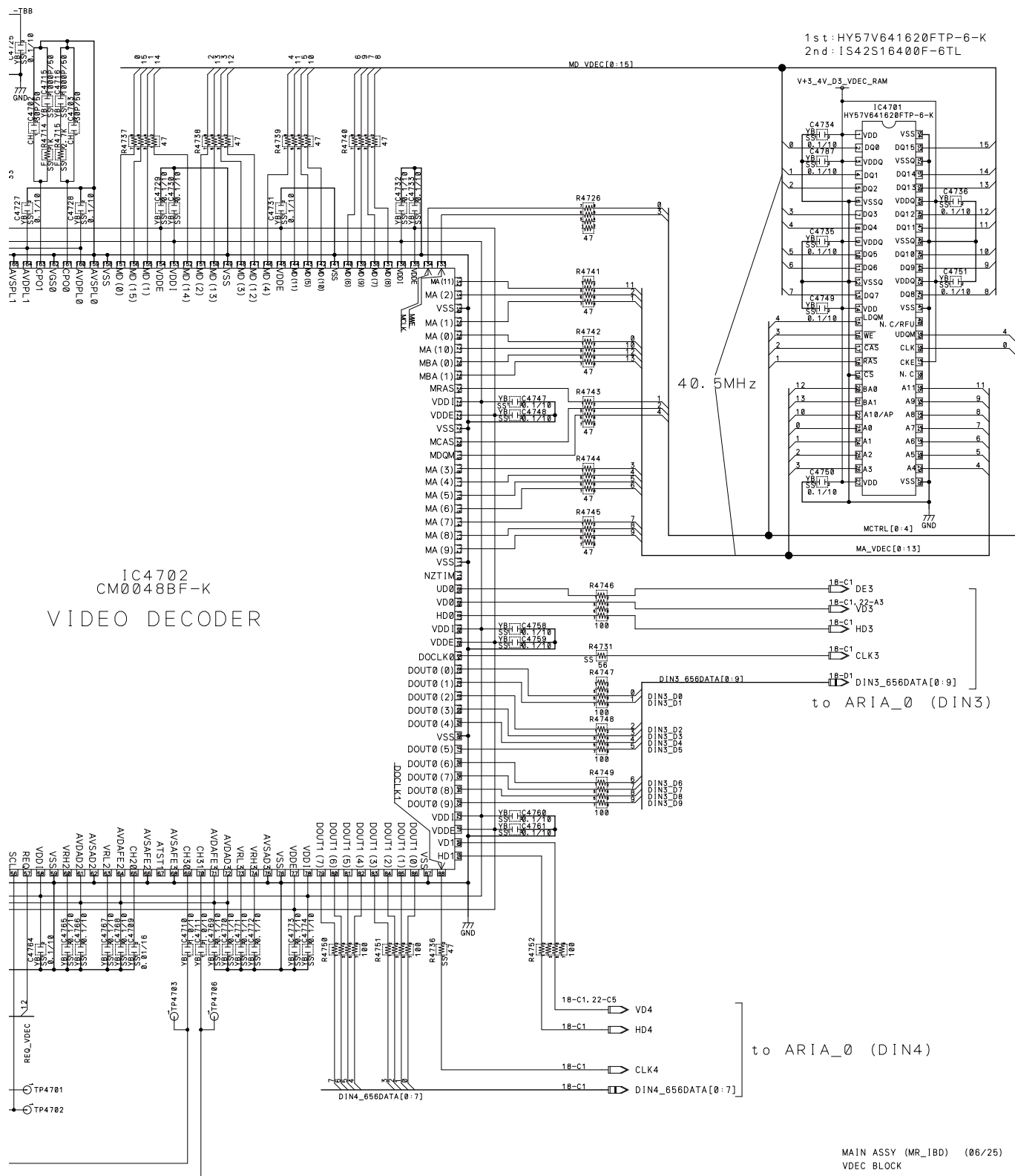
8.6 MAIN BLOCK ASSY (6/24) [VDEC BLOCK]



MHz



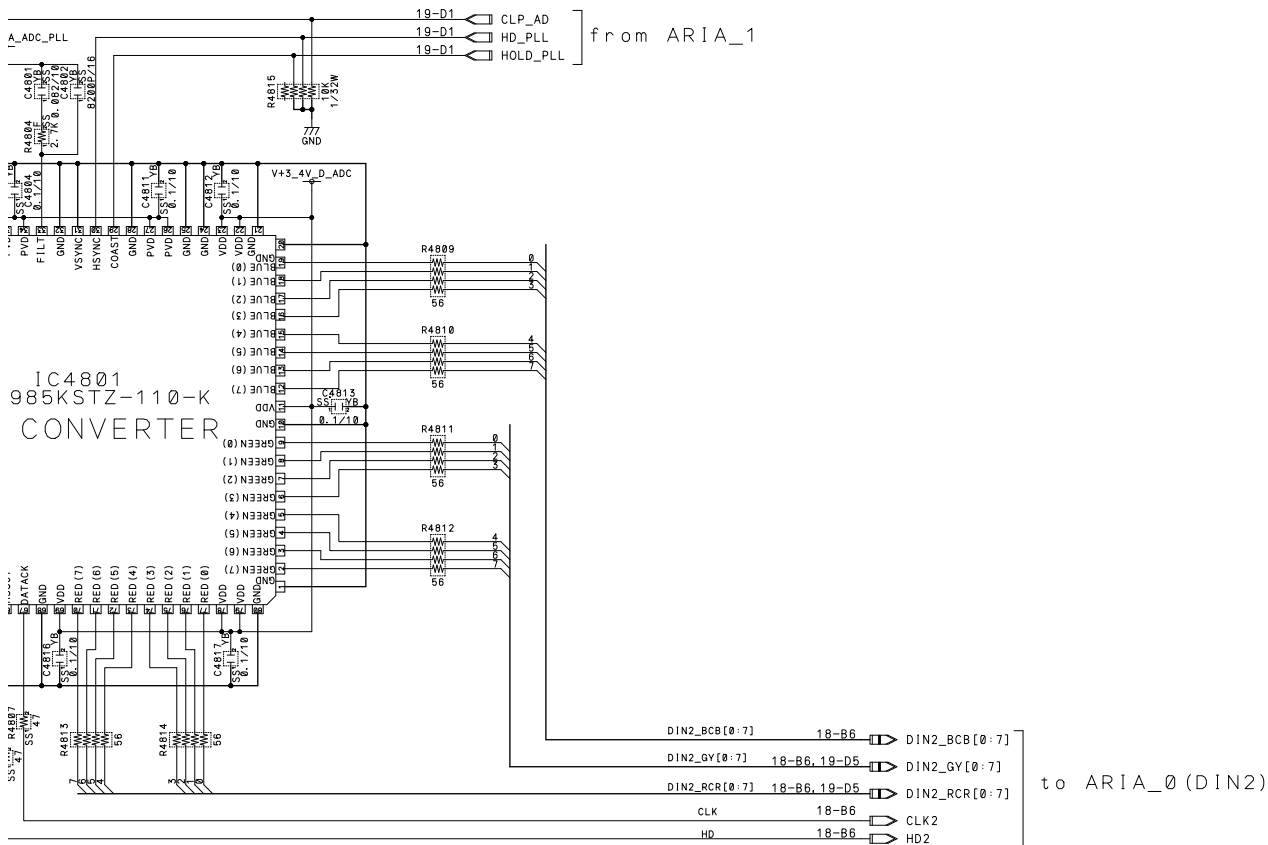
The Δ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.



4

F





MODEL		
ITEM	USED	VACANT
R	4803-4815	
C	4801-4820	
IC	4801	
L	4801, 4802	

MAIN ASSY (MR_1BD) (07/25)
ADC BLOCK

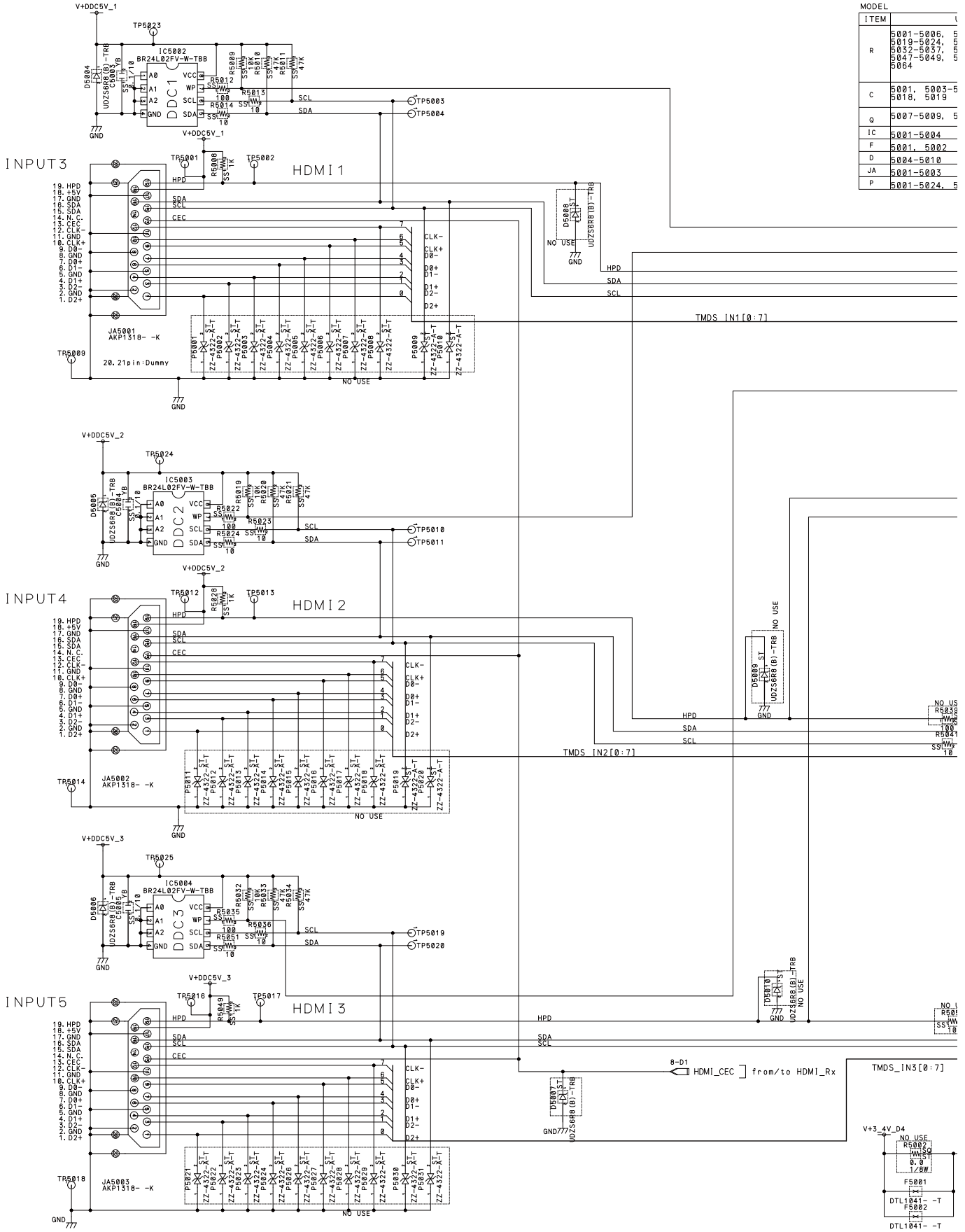
AWV2595- : AWW1431

△

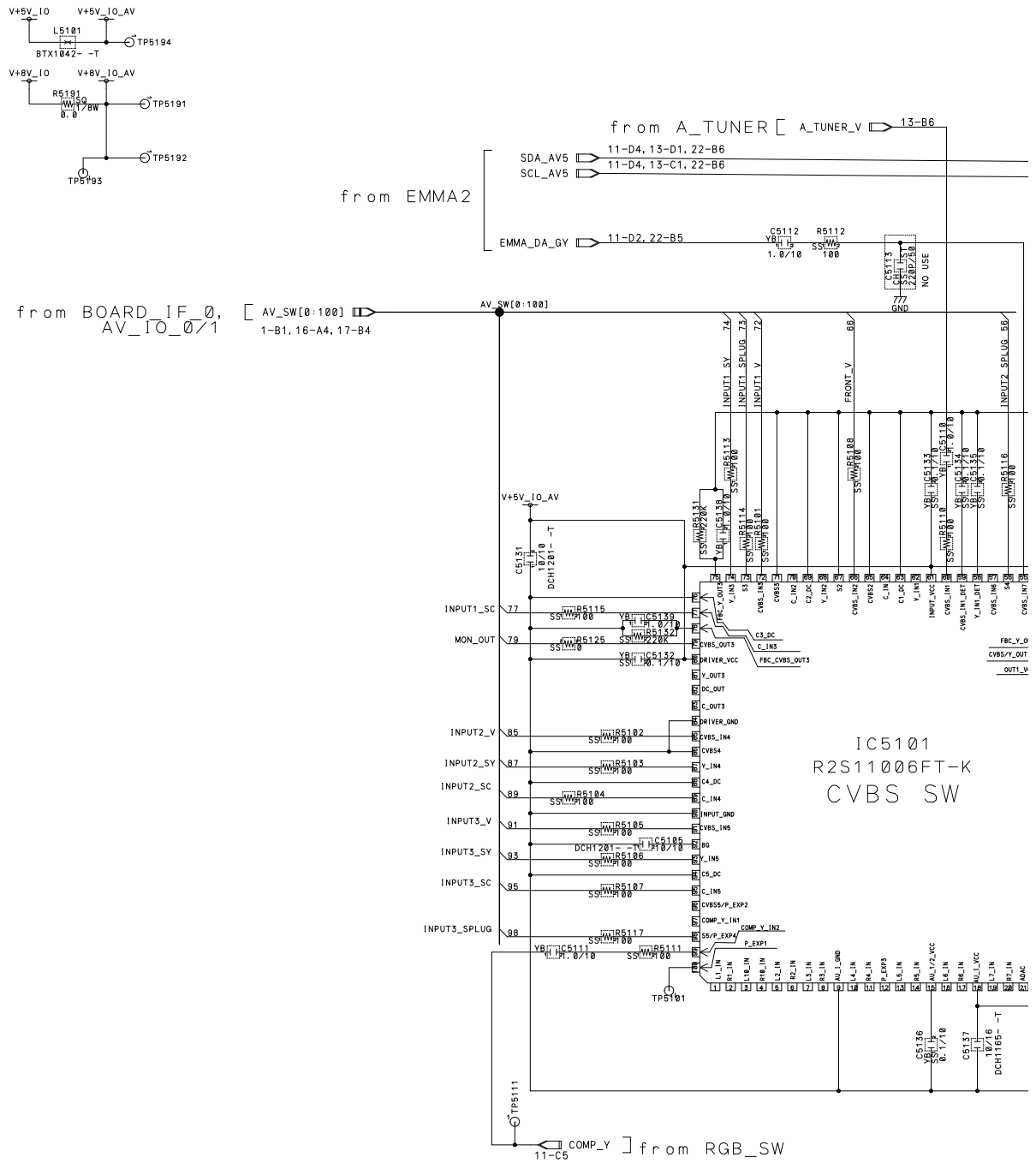
F

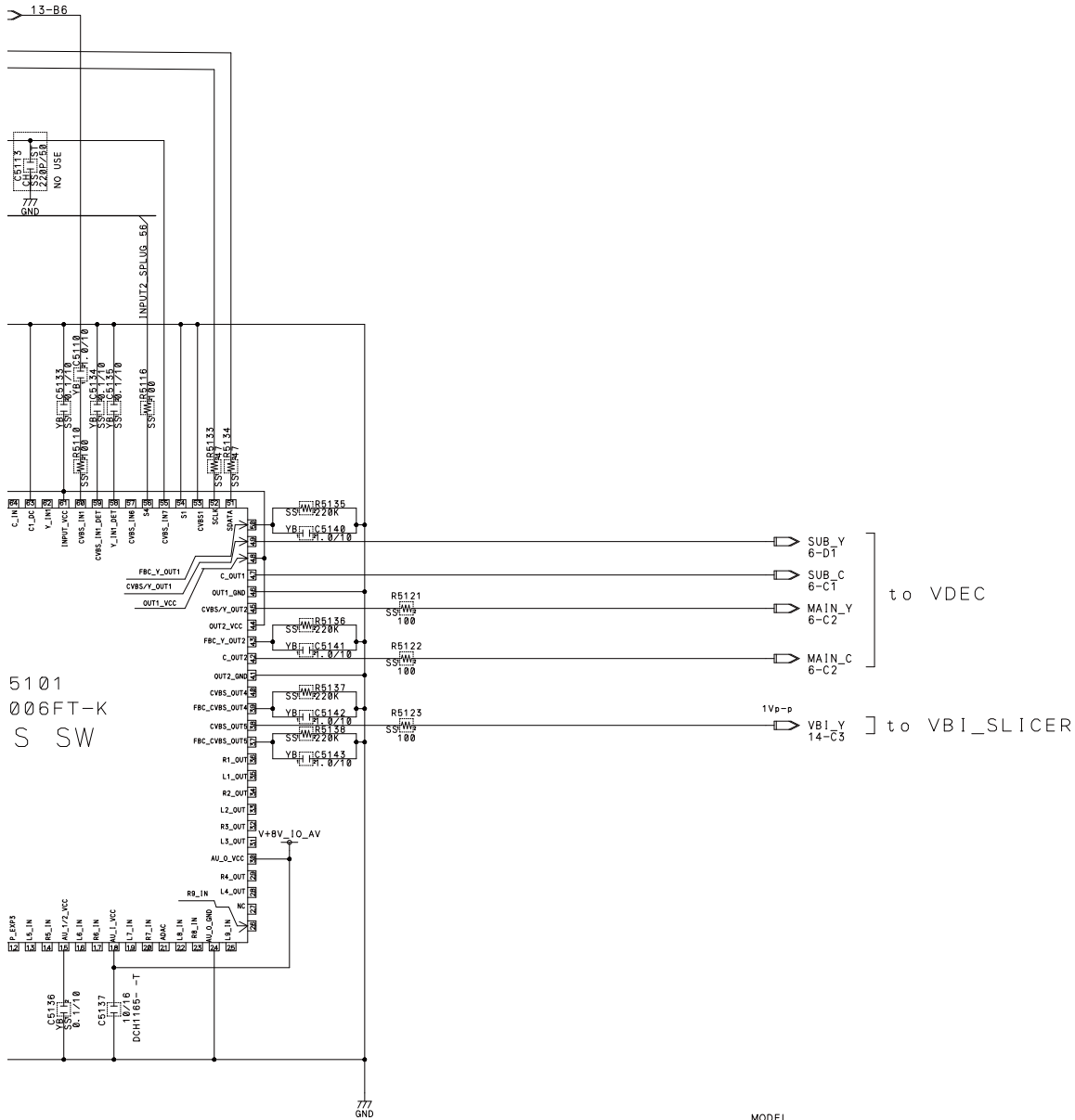
8.9 MAIN BLOCK ASSY (9/24) [HDMI_SW BLOCK]

MODEL	ITEM	
R	5001-5006,	000000
	5019-5024,	
	5032-5037,	
	5047-5049,	
	5064	
C	5001, 5003-5	0018, 5019
	5018, 5019	
Q	5007-5009, 5	
IC	5001-5004	
F	5001, 5002	
D	5004-5010	
JA	5001-5003	
P	5001-5024, 5	



8.10 MAIN BLOCK ASSY (10/24) [AV_SW BLOCK]





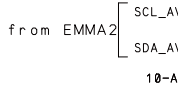
MODEL		
ITEM	USED	VACANT
R	5101-5108, 5110-5117, 5121-5123, 5125, 5131-5138, 5191	
C	5105, 5110-5113, 5131-5143	5113
IC	5101	
L	5101	

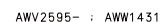
MAIN ASSY (MR_1BD) (10/25)
AV_SW BLOCK

AWV2595- : AWW1431

△

F



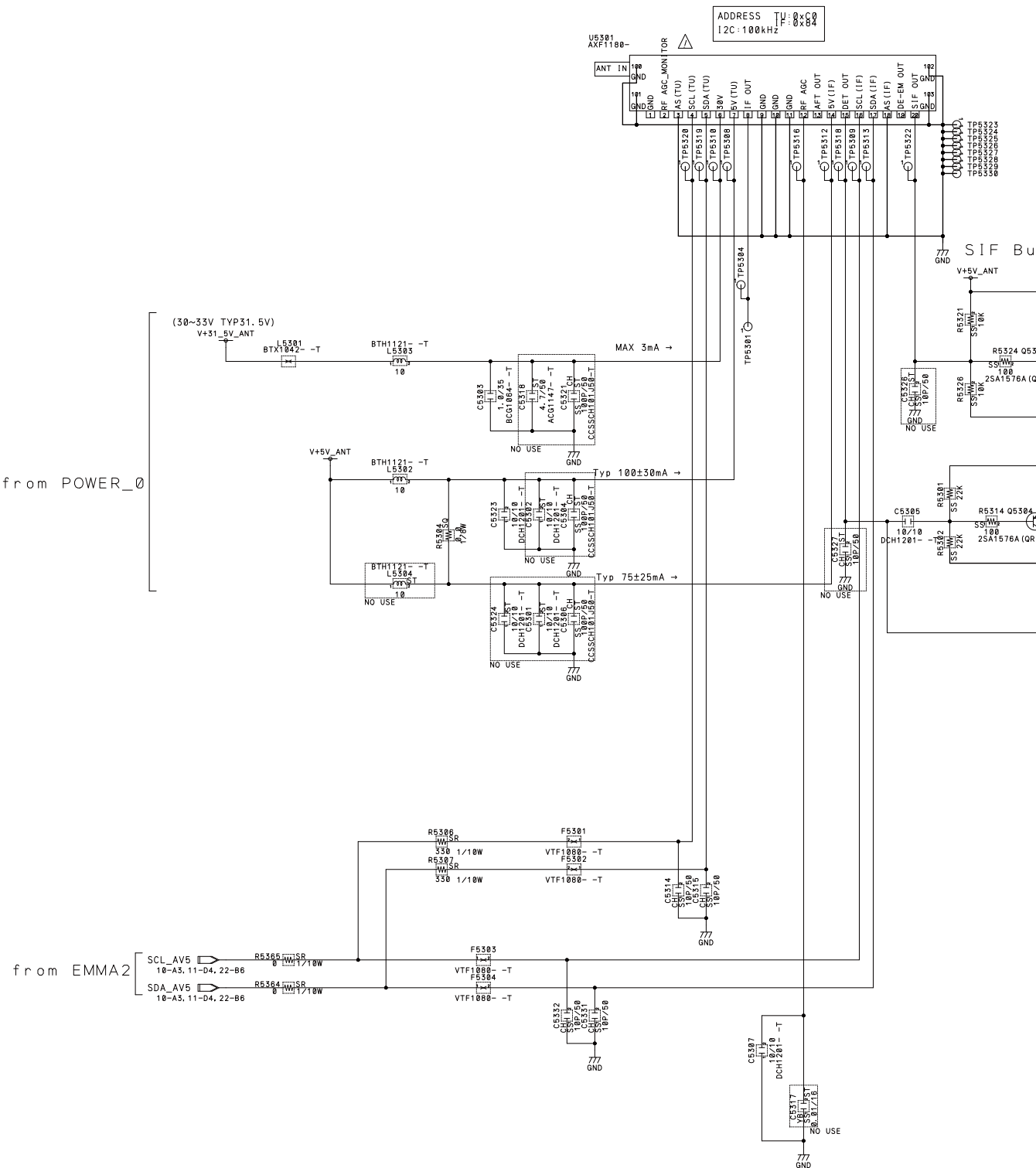


△

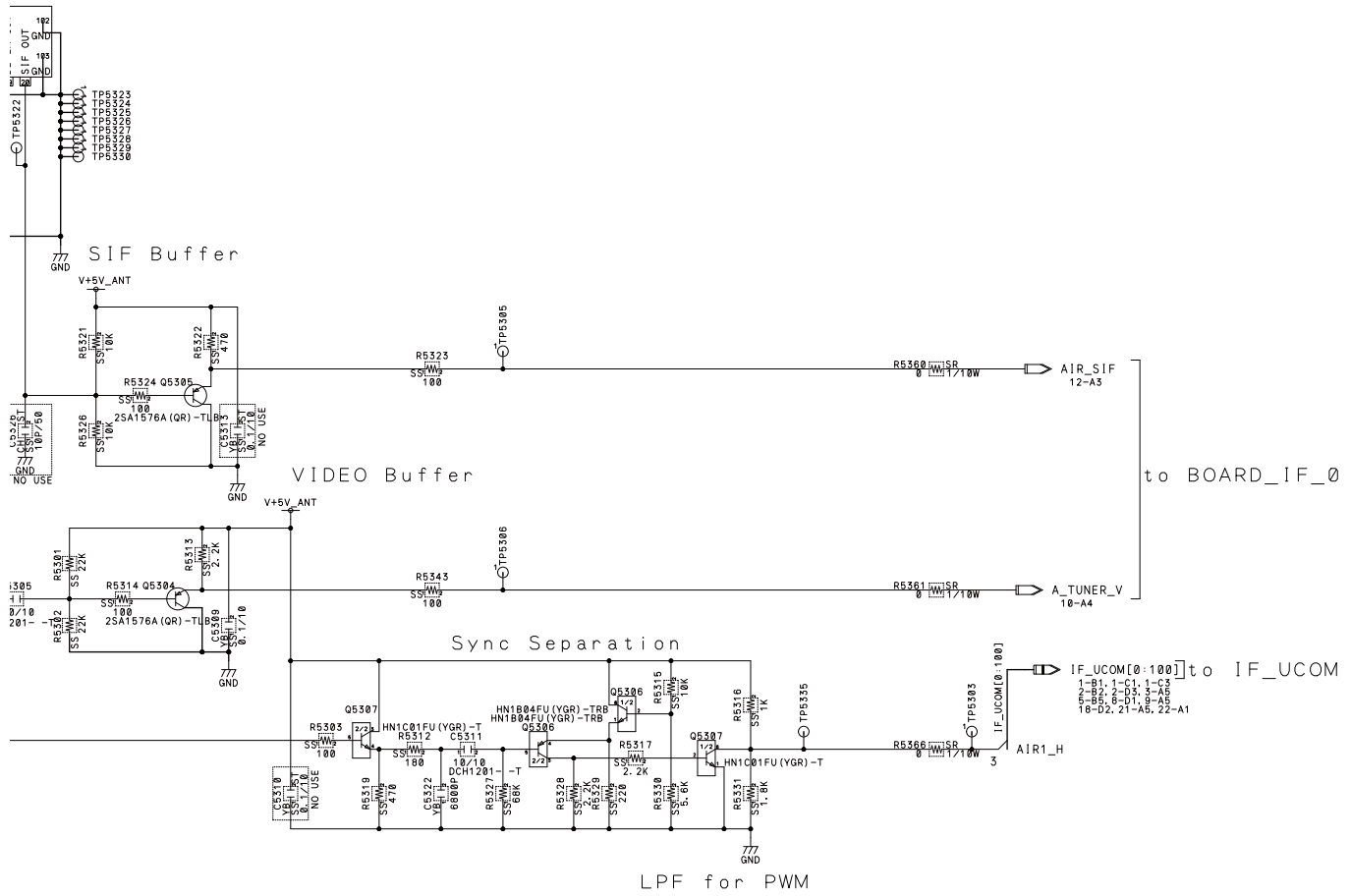


1 2 3 4

8.13 MAIN BLOCK ASSY (13/24) [A_TUNER BLOCK]



The Δ mark found on some components with same parts (safety regulation designation).



MODEL	USED	VACANT
ITEM		
R	5301-5304, 5306, 5307, 5312-5317, 5319, 5321-5324, 5326-5331, 5343, 5360, 5361, 5364-5366	
C	5301-5307, 5309-5311, 5313-5315, 5317, 5319, 5321-5324, 5326, 5327, 5331, 5332	5301, 5302, 5304, 5306, 5310, 5313, 5317, 5318, 5321, 5324, 5326, 5327
Q	5304-5307	
F	5301-5304	
L	5301-5304	5304
U	5301	

mark found on some component parts should be replaced me parts (safety regulation authorized) of identical tion.

MAIN ASSY (MR_1BD) (13/25)
A_TUNER BLOCK

AWV2595- : AWW1431

4

1 2 3 4

8.15 MAIN BLOCK ASSY (15/24) [USB BLOCK]

A

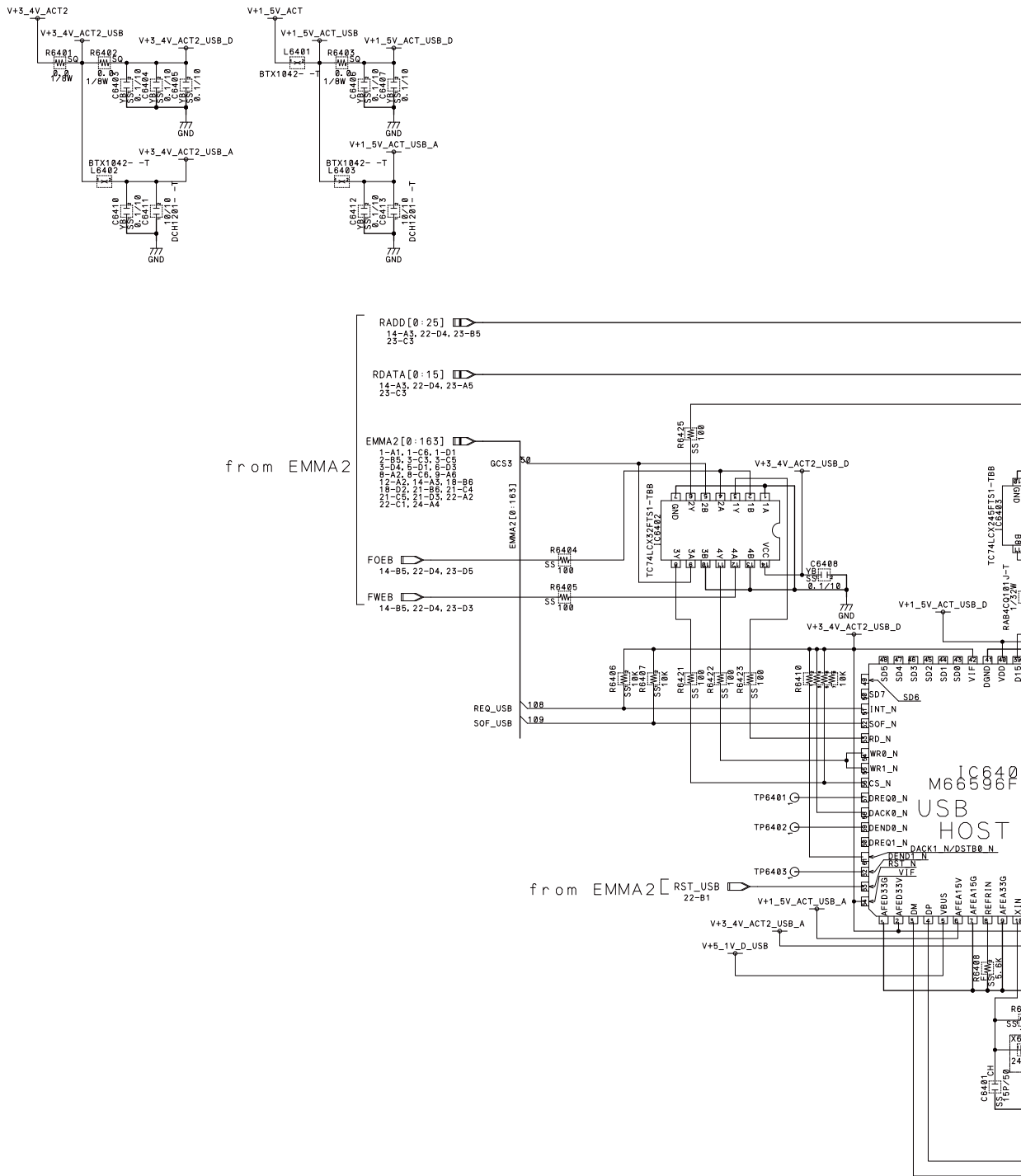
B

C

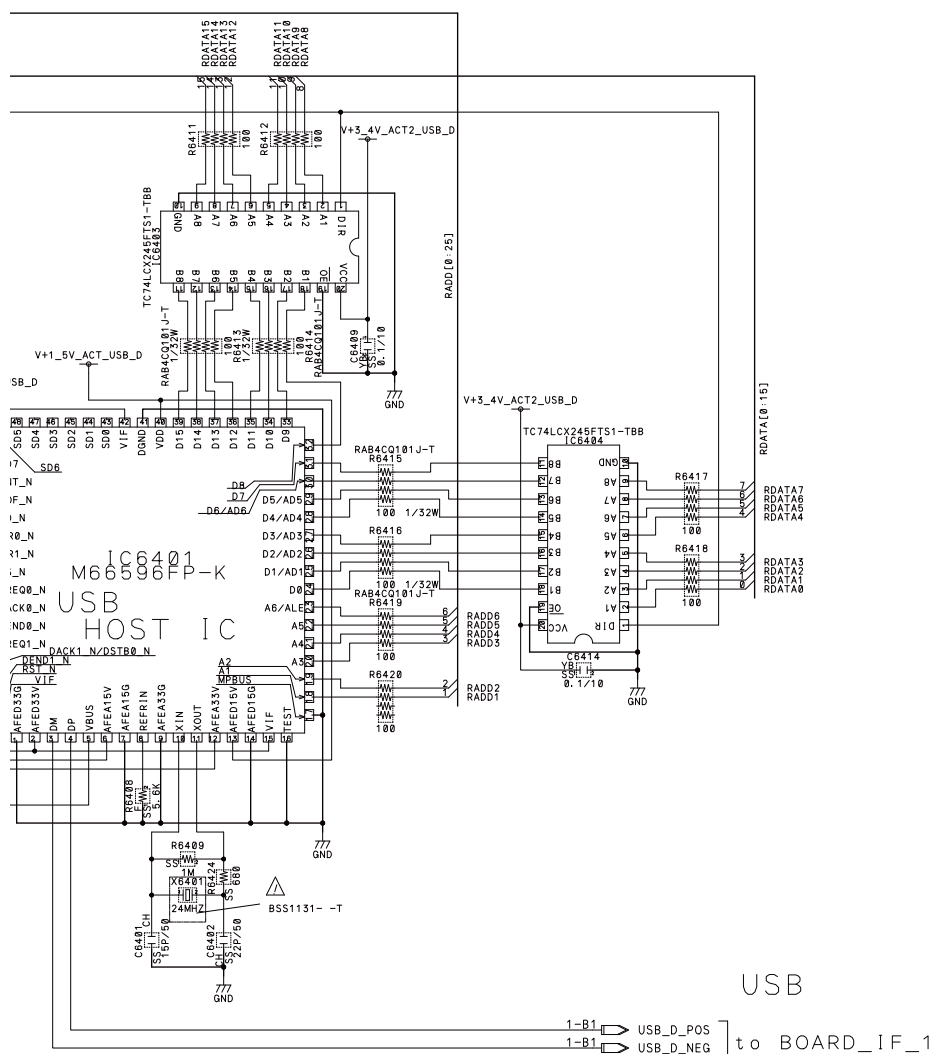
D


E

F



MODEL		
ITEM	USED	VACANT
R	6401-6425	
C	6401-6414	
IC	6401-6404	
L	6401-6403	
X	6401	



The  mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

MAIN ASSY (MR_IBD) (15/25)
USB BLOCK

AWV2595- : AWW1431

1 2 3 4

8.16 MAIN BLOCK ASSY (16/24) [AV_IO_0 BLOCK]

A

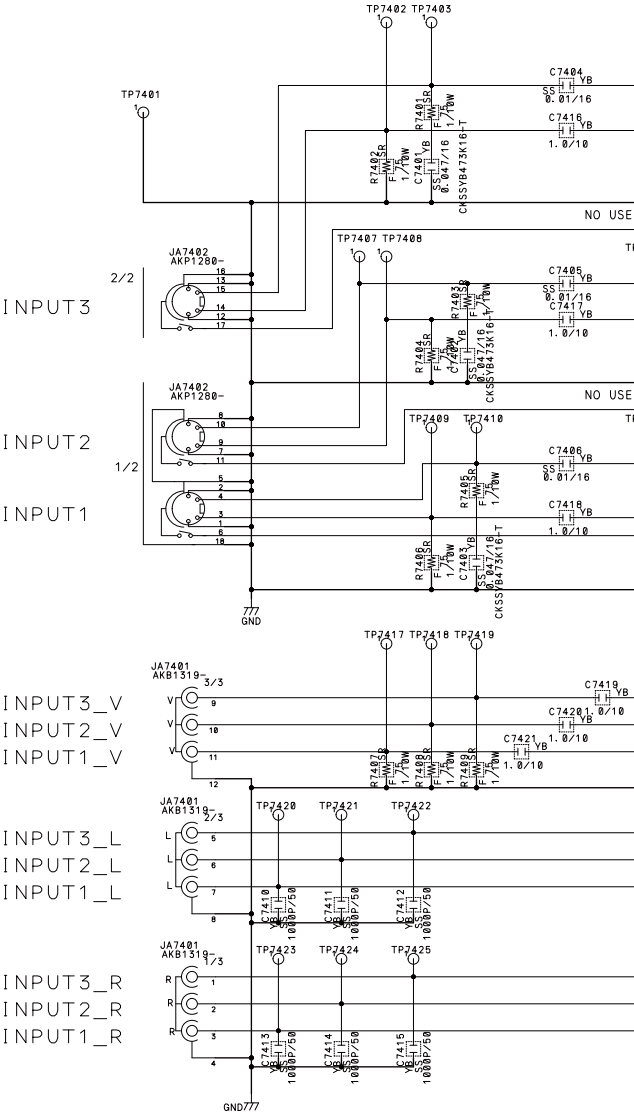
B

C

D

E

F



A

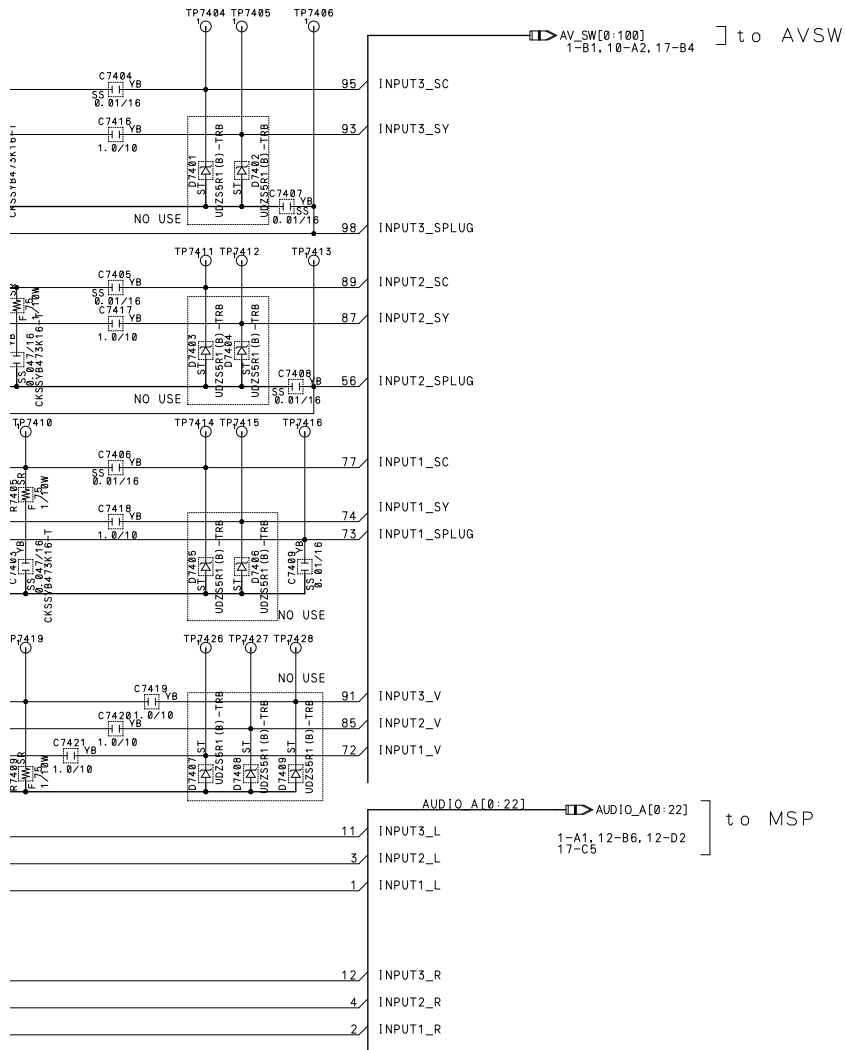
B

C

D

E

F



MODEL

ITEM	USED	VACANT
R	7401-7409	
C	7401-7421	
D	7401-7409	7401-7409
JA	7401, 7402	

MAIN ASSY (MR_IBD) (16/25)
AV_IO_0 BLOCK

AWV2595- : AWW1431

A

B

D

E

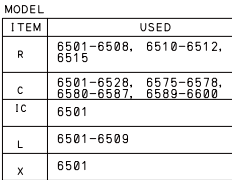
F

F



△

F



8.19 MAIN BLOCK ASSY (19/24) [ARIA_1 BLOCK]

A

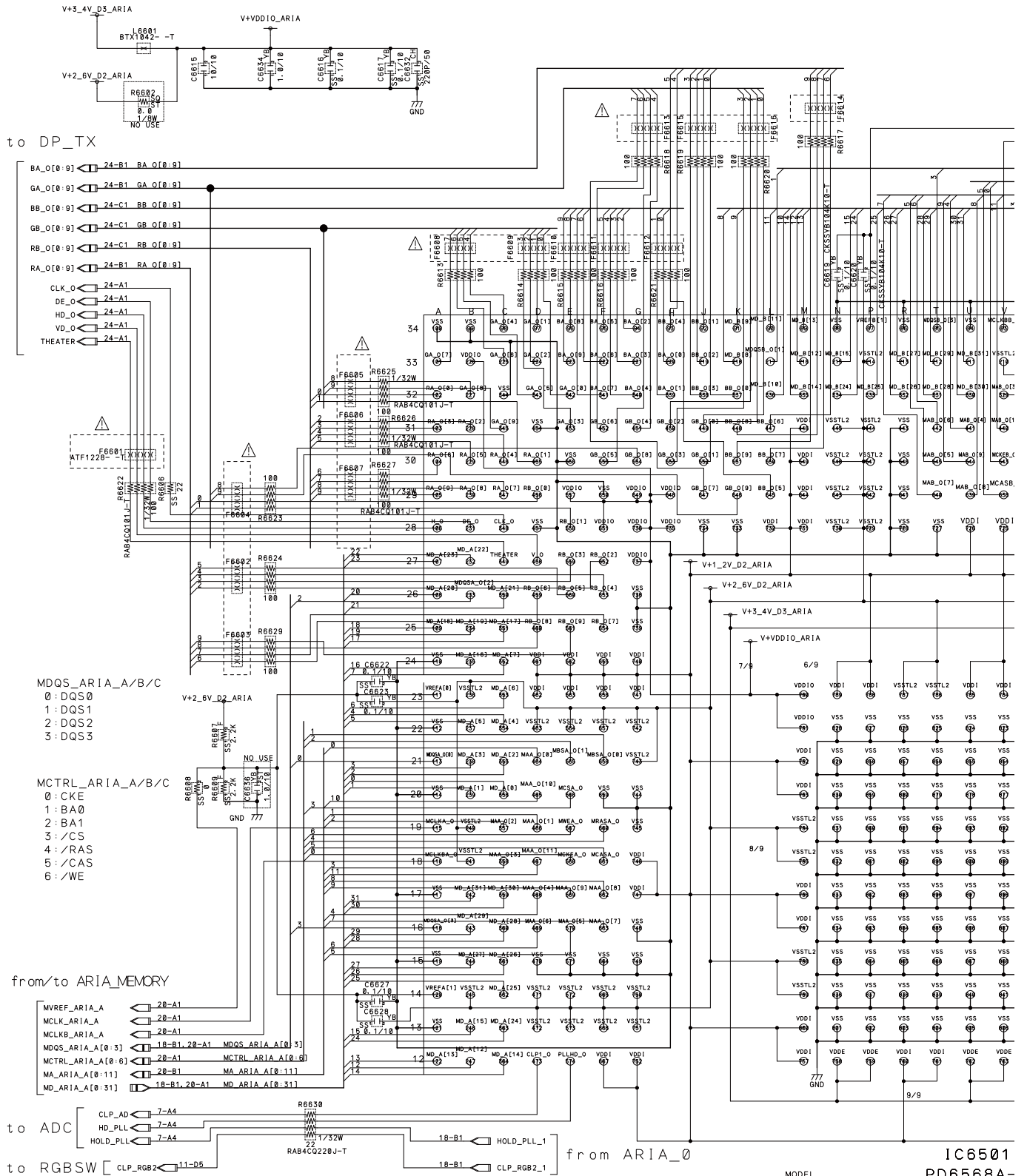
B

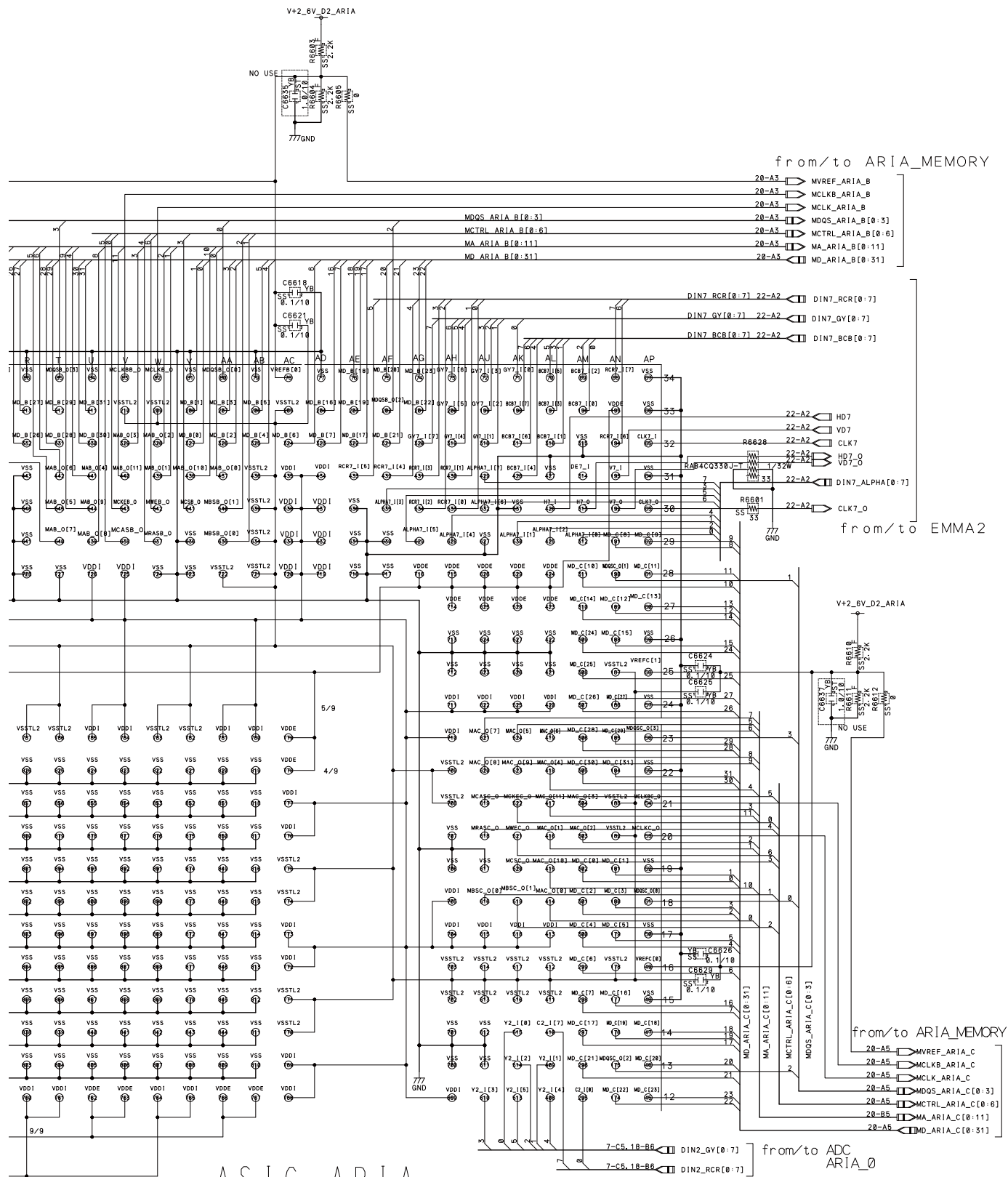
C

D

E

F



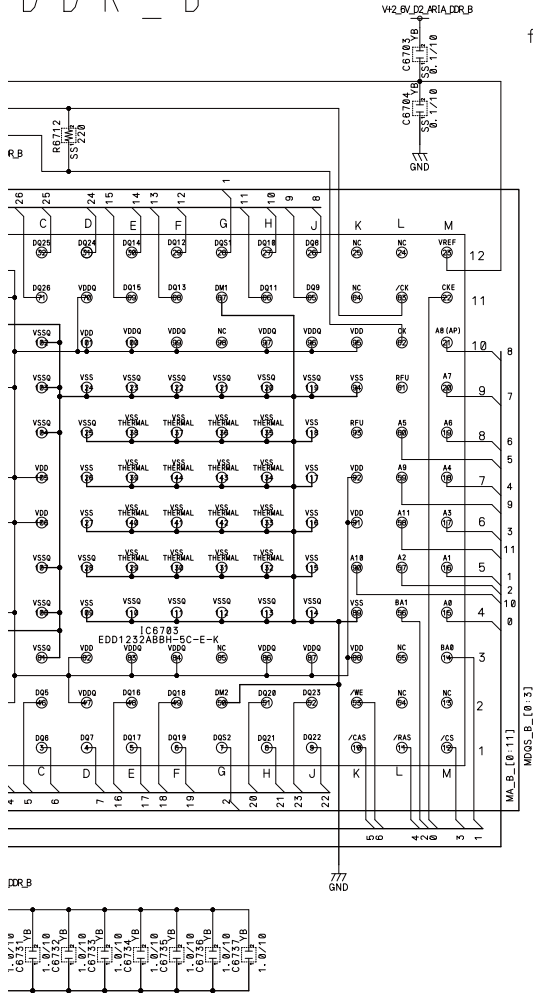


4

F



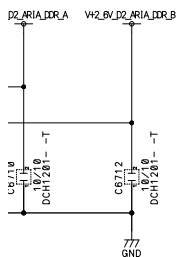
DDR_B



IC6702, 6703, 6704 SUB PARTS

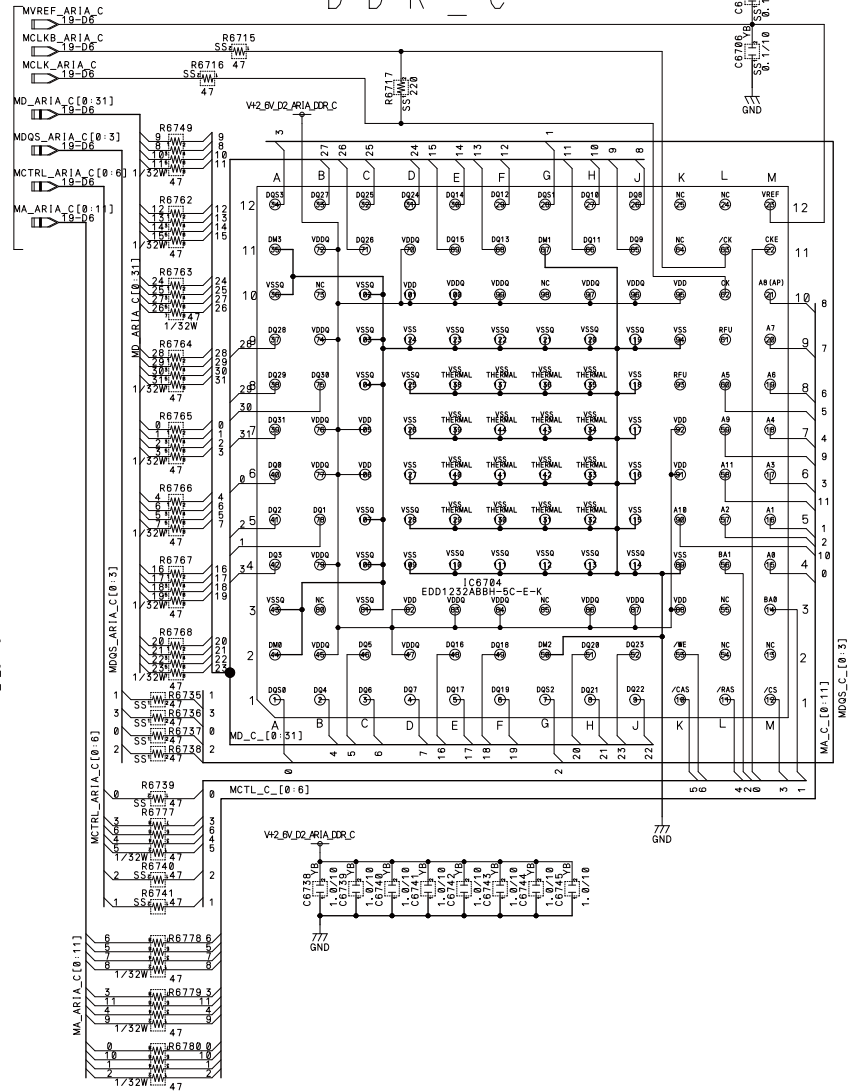
1st EDD1232ABBH-5C-E-K

2nd K4D263238K-VC50-K



from/to ARIA_1

DDR_C



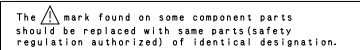
MODEL	USED	VACANT
ITEM		
R	6705-6707, 6710-6712, 6715-6717, 6720-6741, 6743-6780	6744
C	6701-6708, 6718, 6712, 6714, 6716, 6722-6748	
IC	6701-6704	
L	6701-6703	

MAIN ASSY (MR_1BD) (20/25)
ARIA_MEM BLOCK

AWV2595- : AWW1431

△

F

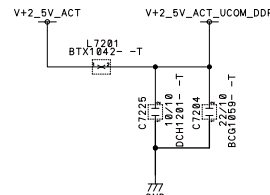






4

MCLK_EMA2 22-B2 SS W10 R7203
MCLKB_EMA2 22-B2 SS W10 R7204
MDQ_EMA2[0:15] 23-B2 SS W10 MDQ_EMA2[0:15]



A



C



F

MAIN ASSY (MR_IBD) (23/25)
EMMA2_MEM BLOCK

AWV2595- : AWW1431

△

E

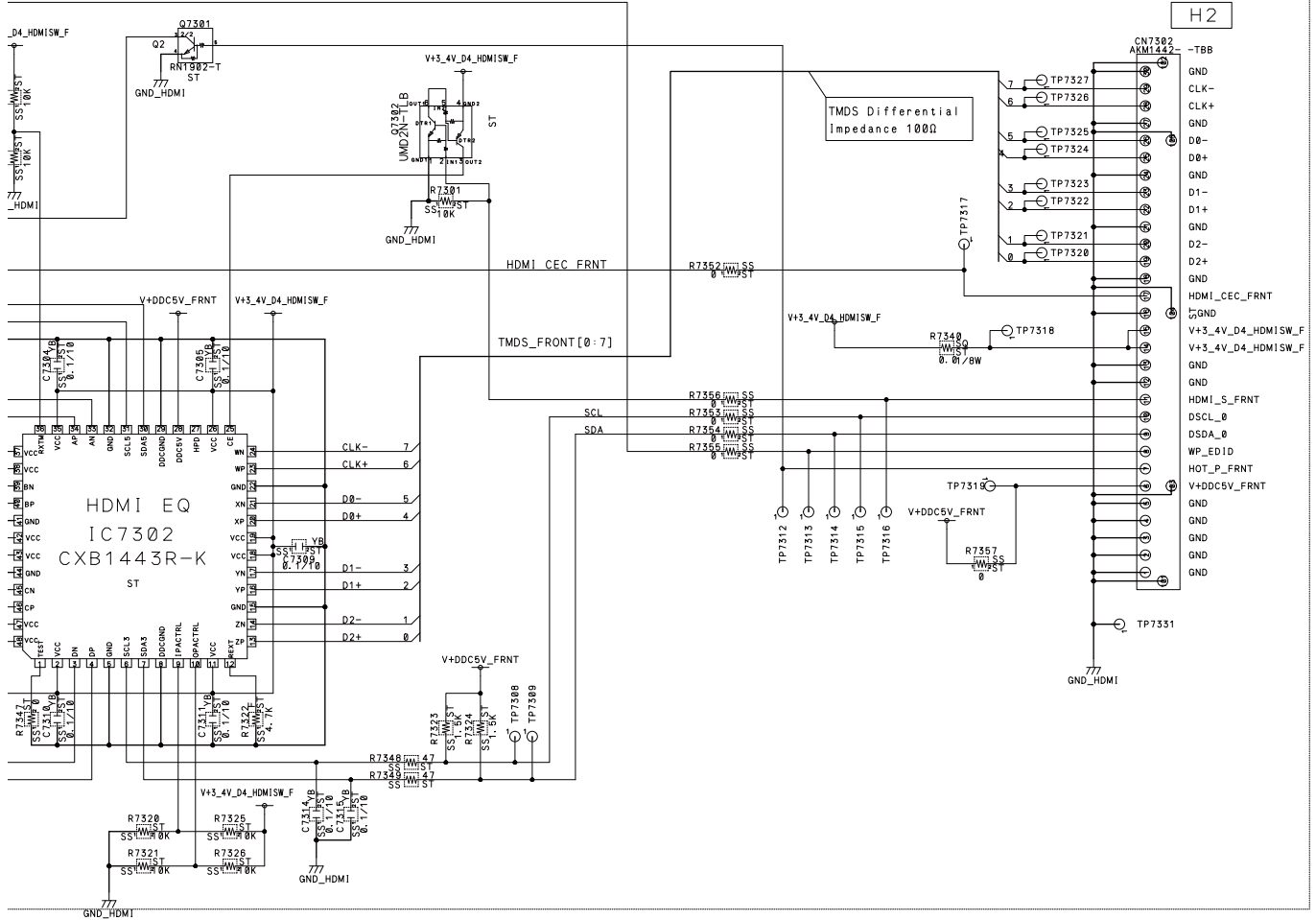


4



from/to MAIN Ass'y

H2



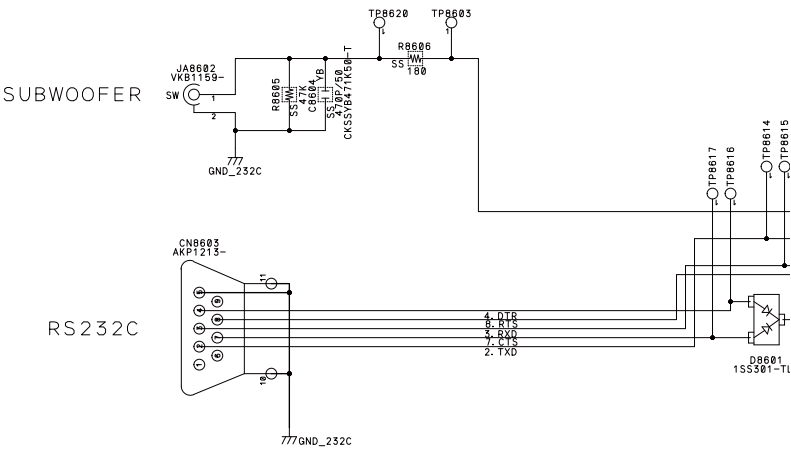
IN Ass'y

MODEL	USED	VACANT
ITEM		
R	7301-7314, 7320-7326, 7340, 7347-7349, 7352-7357	7301-7314, 7320-7326, 7340, 7347-7349, 7352-7357
C	7301, 7303-7311, 7314, 7315	7303-7311, 7314, 7315
Q	7301, 7302	7301, 7302
IC	7301, 7302	7301, 7302
JA	7301, 7303	7301
CN	7302, 7304	7302
L	7301-7303	7303
D	7301	7301
P	7301-7312	7301-7312

MAIN ASSY (MR_IBD) (25/25)
FRONT_HDMI_USB BLOCK

AWV2595- : AWW1432 (MR_IBD)

8.26 REAR IO ASSY



RS232C

PIN No.	SIGNAL
1	N. C
2	TXD
3	RXD
4	DTR
5	GND
6	N. C
7	CTS
8	RTS
9	N. C

NOTES

RESISTORS

SS RS1/16SS***J-T

CAPACITORS

SS YB CKSSYB***K**-T

DIODE

1SS381-TLB
*MC2845-11-TLB
*DAN282U-TLB

A

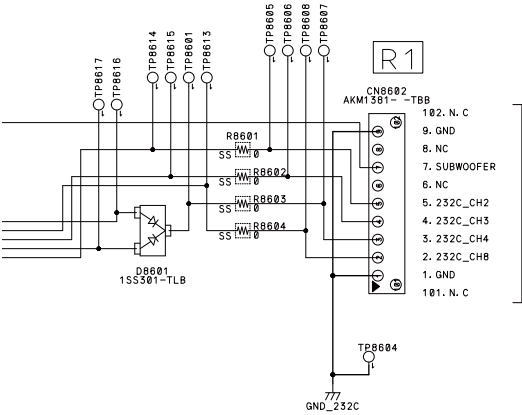
B

C

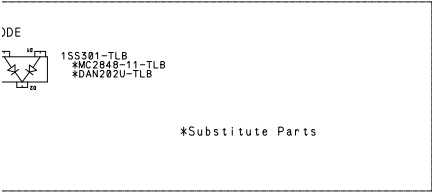
D

E

F



from/to MAIN_ASS'Y



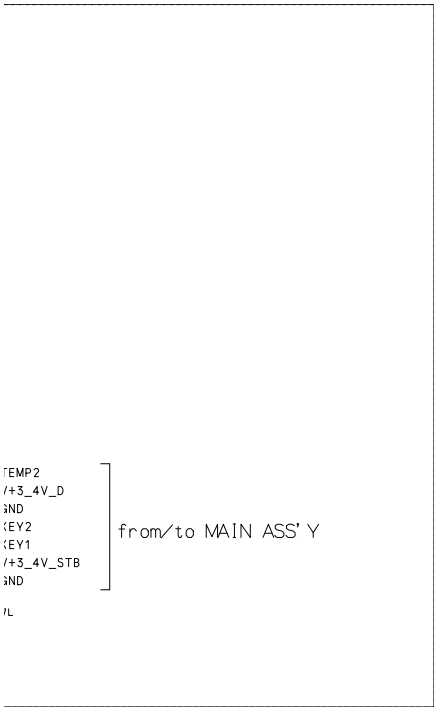
MODEL		
ITEM	USED	VACANT
R	8601-8606	
C	8604	
Q		
IC		
S		
JA	8602	
L		
D	8601	
CN	8602, 8603	

EUKUGOU ASSY (MR_1BD) (1/3)
REAR_TO ASSY
AWY2586-
AWY1481

A




B



TEMP2
/+3_4V_D
IND
EY2
EY1
/+3_4V_STB
IND
IL

from/to MAIN ASS'Y

The  mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

C

D

E

MODEL		
ITEM	USED	VACANT
R	9401-9405, 9407-9419	9405, 9410, 9419
C	9401-9413	9401-9403, 9405, 9408, 9412, 9413
Q	9401	
IC		
S	9401-9406	
TH	9401	
L	9401-9410	9407
D	9401-9403	
CN	9401, 9402	

F

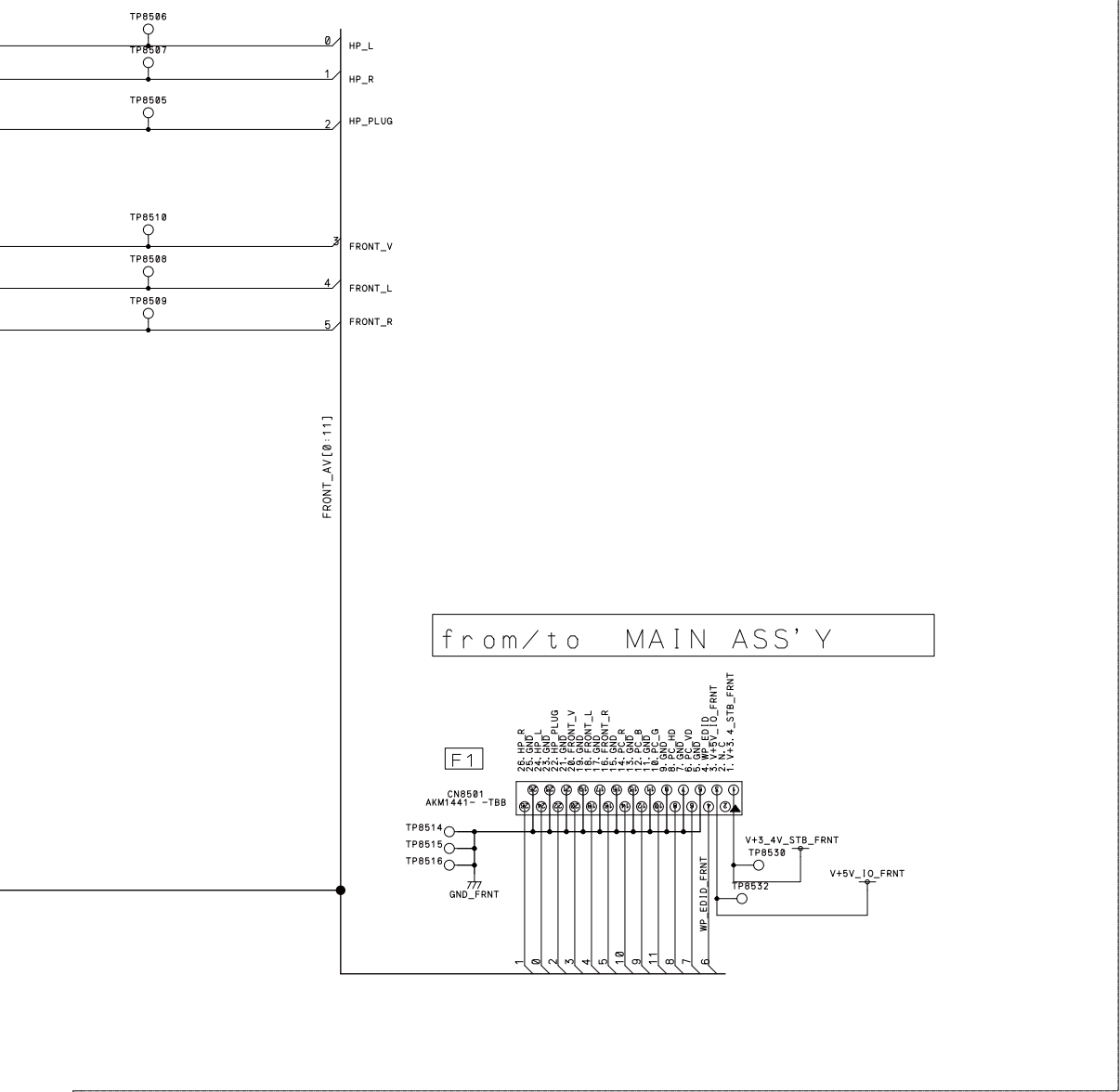
FUKUGOU ASS'Y (MR_IBD) (2/3)
REV ASS'Y
AWV2596-
AWW1227
AWW1246

4

F



Y AWW1443



from/to MAIN ASS'Y

NOTES

RESISTORS CAPACITORS
SS RS1/16SS***J-T SS YB CKSSYB***K*-T
RST RST1/2SP***J-T VB CKSRYB***K*-T
F RS1/10SR***F-T
RAB4CQ***J-T

MODEL	USED	VACANT
ITEM		
R	8501-8504, 8506-8512, 8514-8527	
C	8501-8515	8505, 8506, 8509
Q	8501-8504	
IC	8501, 8502	
F		
JA	8501, 8503	
L	8501, 8502	8501, 8502
D	8501-8509, 8511	8501-8506, 8509, 8511
CN	8501, 8503	

EUKUGOV ASS'Y (MR_1BD) (3/3)
FRONT ASS'Y

AWW2596-
AWW1443

1 2 3 4

8.29 VOLTAGES AND WAVEFORMS

[1] VOLTAGES

A

MAIN BLOCK Assy		FRONT_HDM_USB Assy	
M13 CN4004 (AKM1276- -TBB)		Voltage (V)	H1 CN7304 (AKM1291- -TBB)
NO.	Name		Name NO.
1	SHIELD	0	SHIELD 1
2	GND	0	GND 2
3	D+	0	D+ 3
4	D-	0	D- 4
5	VBUS	5.1	VBUS 5

MAIN BLOCK Assy		REAR IO Assy	
M16 CN4002 (AKM1378- -TBB)		Voltage (V)	R1 CN8602 (AKM1381- -TBB)
NO.	Name		Name NO.
1	GND	0	GND 9
2	N.C.	0	N.C. 8
3	SUBWOOFER	0	SUBWOOFER 7
4	N.C.	0	N.C. 6
5	232C_CH2	-5.5	232C_CH2 5
6	232C_CH3	-8.3	232C_CH3 4
7	232C_CH4	0	232C_CH4 3
8	232C_CH8	5.6	232C_CH8 2
9	GND	0	GND 1

B

MAIN BLOCK Assy		LED Assy	
M2 CN4204 (AKW1343- -TBB)		Voltage (V)	L1 CN9402 (KM200NA6L)
NO.	Name		Name NO.
1	OPEN	0	
2	OPEN	0	
3	TEMP2	2.1	
4	GND	0	
5	KEY1	3.4	
6	GND	0	
7	LED-	0	LED- 6
8	LED_TIMER	3.3/0	LED_TIMER 4
9	LED_ON	2.8/0	LED_ON 2
10	OPEN	0	
11	OPEN	0	
12	LED-	0	LED- 1
13	LED_OFF	3.3/0	LED_OFF 3
14	LED_MODEM(LED-)	0	LED_MODEM 5
15	OPEN	0	
16	V+3_4V_STB	3.4	
17	KEY2	3.4	
18	V+3_4V_D	3.3	
19	OPEN	0	
20	OPEN	0	

MAIN BLOCK Assy		KEY Assy	
M2 CN4204 (AKW1343- -TBB)		Voltage (V)	K1 CN9401 (KM200NA7L)
NO.	Name		Name NO.
1	OPEN	0	
2	OPEN	0	
3	TEMP2	2.1	TEMP2 7
4	GND	0	GND 5
5	KEY1	3.4	KEY1 3
6	GND	0	GND 1
7	LED-	0	
8	LED_TIMER	3.3/0	
9	LED_ON	2.8/0	
10	OPEN	0	
11	OPEN	0	
12	LED-	0	
13	LED_OFF	3.3/0	
14	LED_MODEM(LED-)	0	
15	OPEN	0	
16	V+3_4V_STB	3.4	V+3_4V_STB 2
17	KEY2	3.4	KEY2 4
18	V+3_4V_D	3.3	V+3_4V_D 6
19	OPEN	0	
20	OPEN	0	

C

D

MAIN BLOCK Assy		FAN	
M31 CN4201 (AKM1276- -TBB)		Voltage (V)	
NO.	Name		Name NO.
1	N.C.	0	
2	FAN_VCC2	7.0/8.9	VCC
3	FAN_NEG2	0.1	NG
4	GND	0	GND
5	N.C.	0	

E

F

MAIN BLOCK Assy

FRONT IO Assy

MAIN BLOCK Assy

POWER SUPPLY Unit

M12 CN4003 (AKM1441- -TBB)		Voltage (V)	F1 CN8501 (AKM1441- -TBB)	
NO.	Name		Name	NO.
1	HP_R	2.1	HP_R	26
2	GND	0	GND	25
3	HP_L	2.1	HP_L	24
4	GND	0	GND	23
5	HP_PLUG	0/3.1	HP_PLUG	22
6	GND	0	GND	21
7	FRONT_V	2.5	FRONT_V	20
8	GND	0	GND	19
9	FRONT_L	-0.2 / 0.2	FRONT_L	18
10	GND	0	GND	17
11	FRONT_R	-0.2 / 0.2	FRONT_R	16
12	GND	0	GND	15
13	PC_R	1.8	PC_R	14
14	GND	0	GND	13
15	PC_B	1.8	PC_B	12
16	GND	0	GND	11
17	PC_G	1.8	PC_G	10
18	GND	0	GND	9
19	PC_HD	0/3.4	PC_HD	8
20	GND	0	GND	7
21	PC_VD	0/3.4	PC_VD	6
22	GND	0	GND	5
23	WP_EDID	0	WP_EDID	4
24	V+5V_IO_FRONT	5.0	V+5V_IO_FRONT	3
25	N.C	0	N.C	2
26	V+3_4V_STB_FRONT	3.4	V+3_4V_STB_FRONT	1

M1 CN4203 (AKM1440-)		Voltage (V)	P2 (B26B-PNDZ-1)		Voltage (V)
NO.	Name		Name	NO.	
1	V+17V	19.1	V+5_1V_STB	26	4.9
2	V+5_1V_STB	4.9	V+17V	25	19.1
3	GND	0	GND	24	0
4	GND	0	GND	23	0
5	V+12V	13.0	V+12V	22	13.0
6	V+12V	13.0	V+12V	21	13.0
7	GND	0	GND	20	0
8	GND	0	GND	19	0
9	V+6_5V	6.6	V+6_5V	18	6.6
10	V+6_5V	6.6	V+6_5V	17	6.6
11	V+6_5V	6.6	V+6_5V	16	6.6
12	V+6_5V	6.6	V+6_5V	15	6.6
13	GND	0	GND	14	0
14	GND	0	GND	13	0
15	GND	0	GND	12	0
16	GND	0	GND	11	0
17	V+3_4V_STB	3.4	V+3_4V_STB	10	3.4
18	V+3_4V_STB	3.4	V+3_4V_STB	9	3.4
19	V+3_4V_STB	3.4	V+3_4V_STB	8	3.4
20	V+3_4V_STB	3.4	V+3_4V_STB	7	3.4
21	GND	0	V+3_4V_STB	6	3.4
22	V+3_4V_STB	3.4	GND	5	0
23	PD_TRG	0	GND	4	0
24	GND	0	PD_TRG	3	0
25	AC_DET	3.1	RELAY	2	3.1
26	RELAY	3.2	AC_DET	1	3.2

[2] WAVEFORMS

Refer to the section “3.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS” .

9. PCB CONNECTION DIAGRAM

9.1 MAIN BLOCK AND FRONT_HDM_USB ASSYS

A

SIDE A

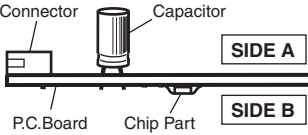
MAIN BLOCK ASSY

NOTE FOR PCB DIAGRAMS :

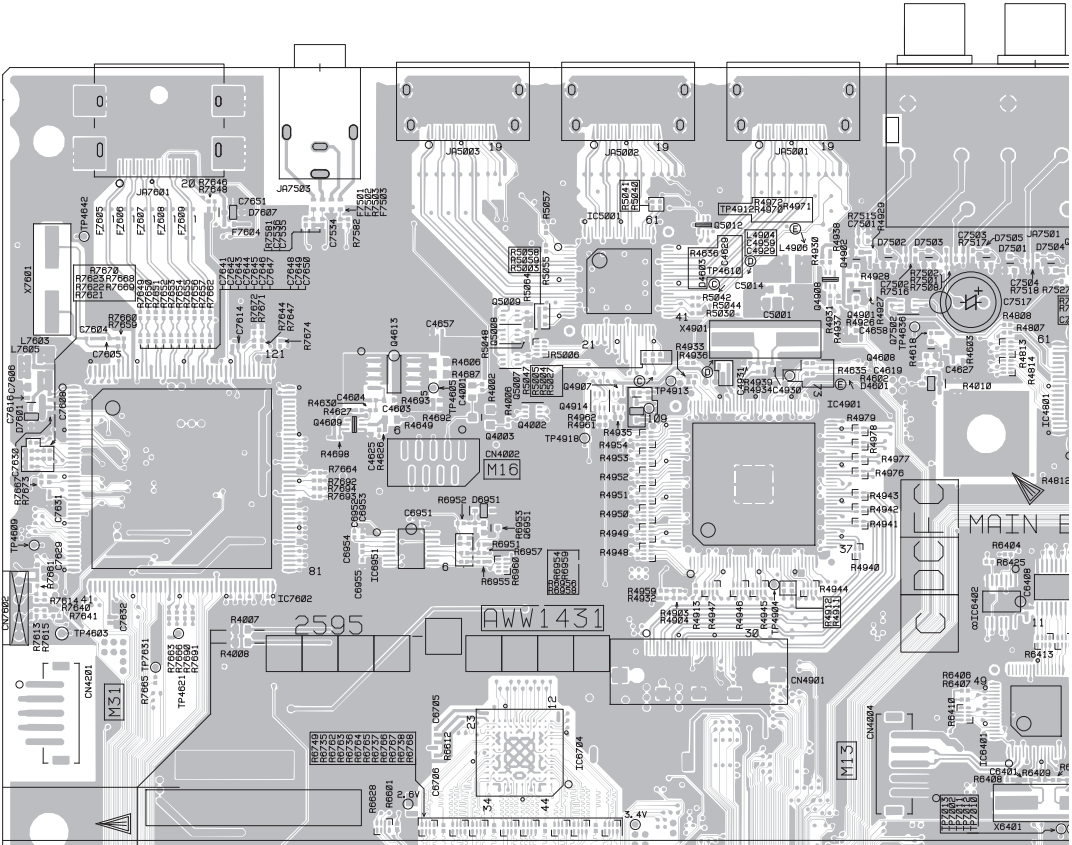
1. The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

B

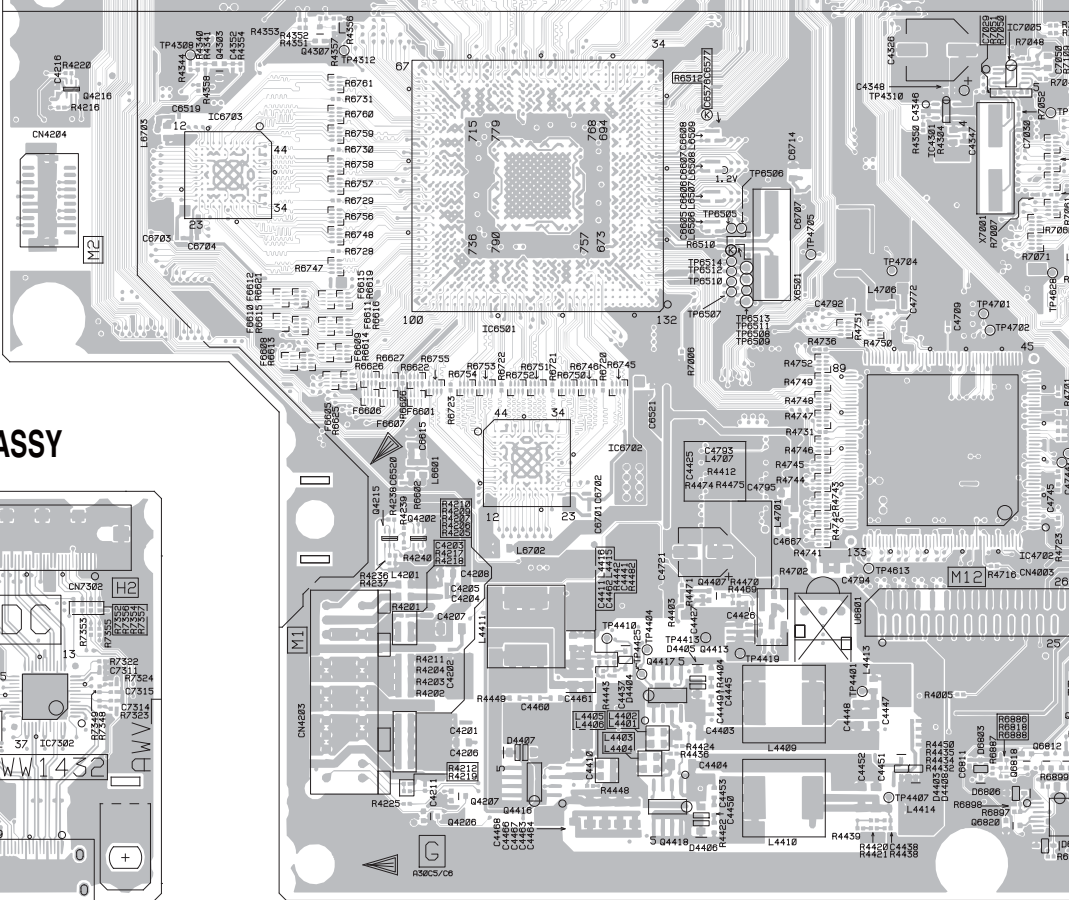
2. View point of PCB diagrams.



C

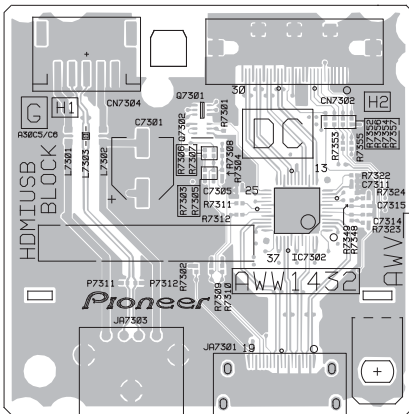


D



FRONT_HDM_USB ASSY

E



F

(ANP2227-A)

SIDE A

A

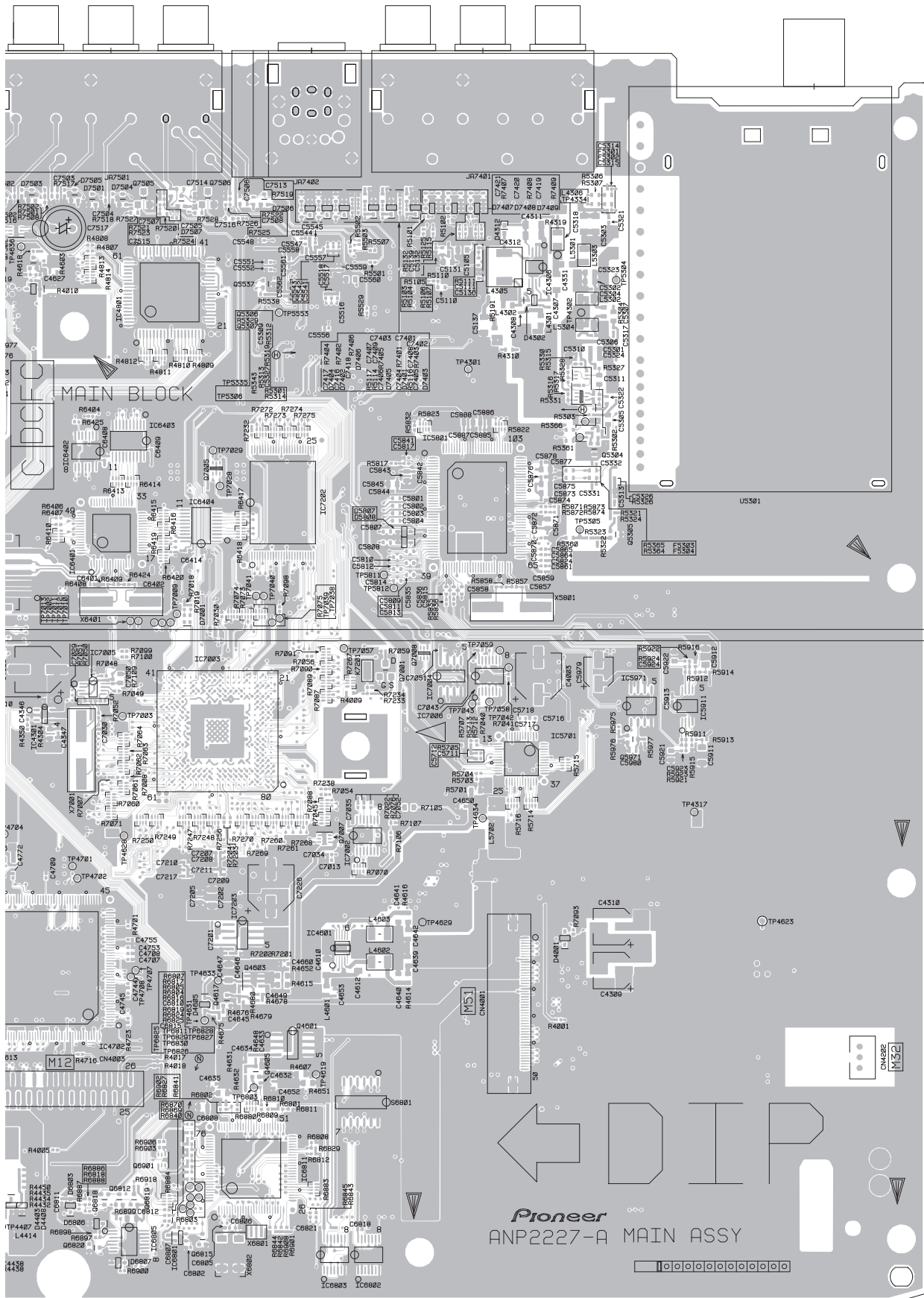
B

C

D

E

F

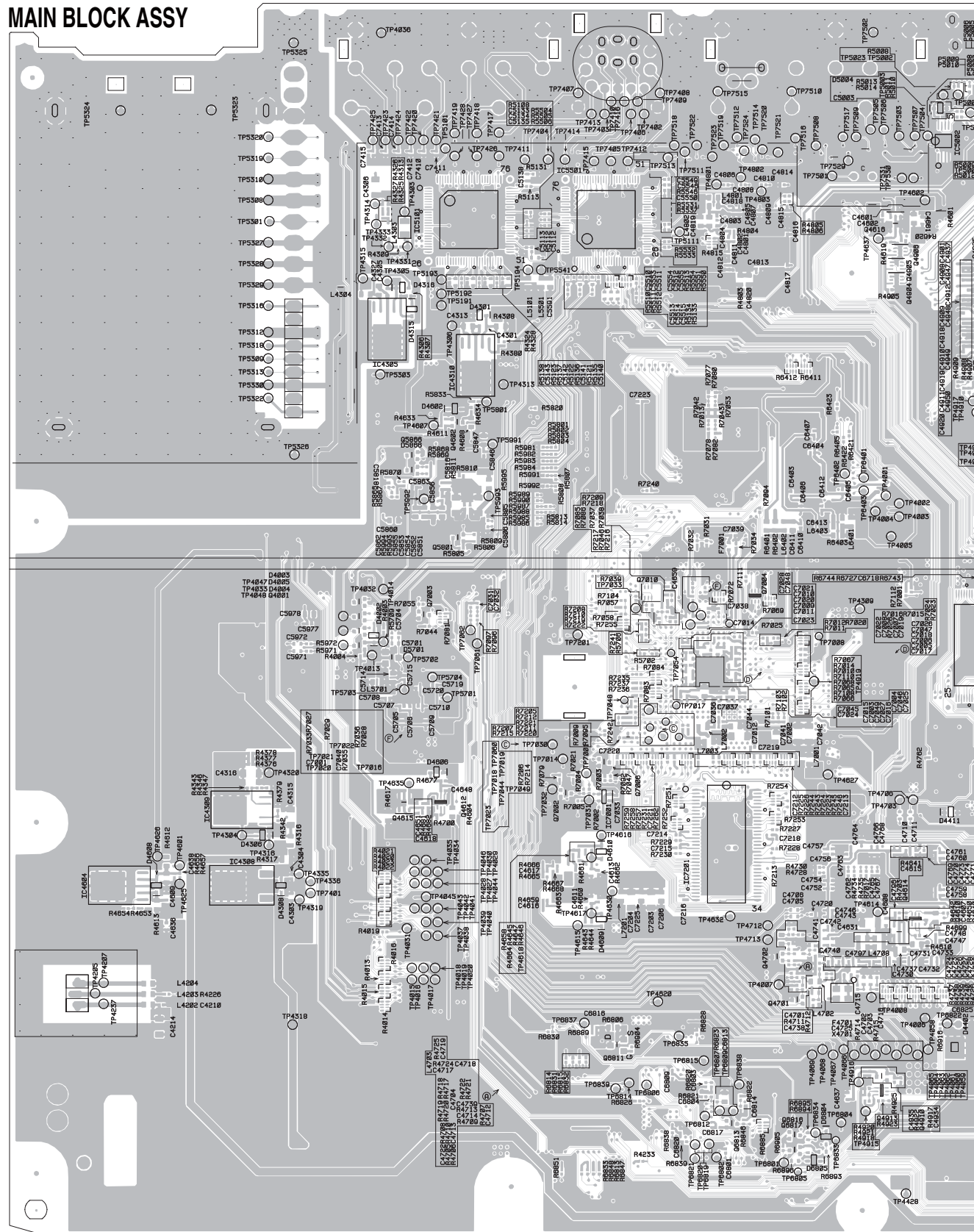


(ANP2227-A)

KRP-M01

SIDE B

MAIN BLOCK ASSY



KRP-M01

SIDE B

A

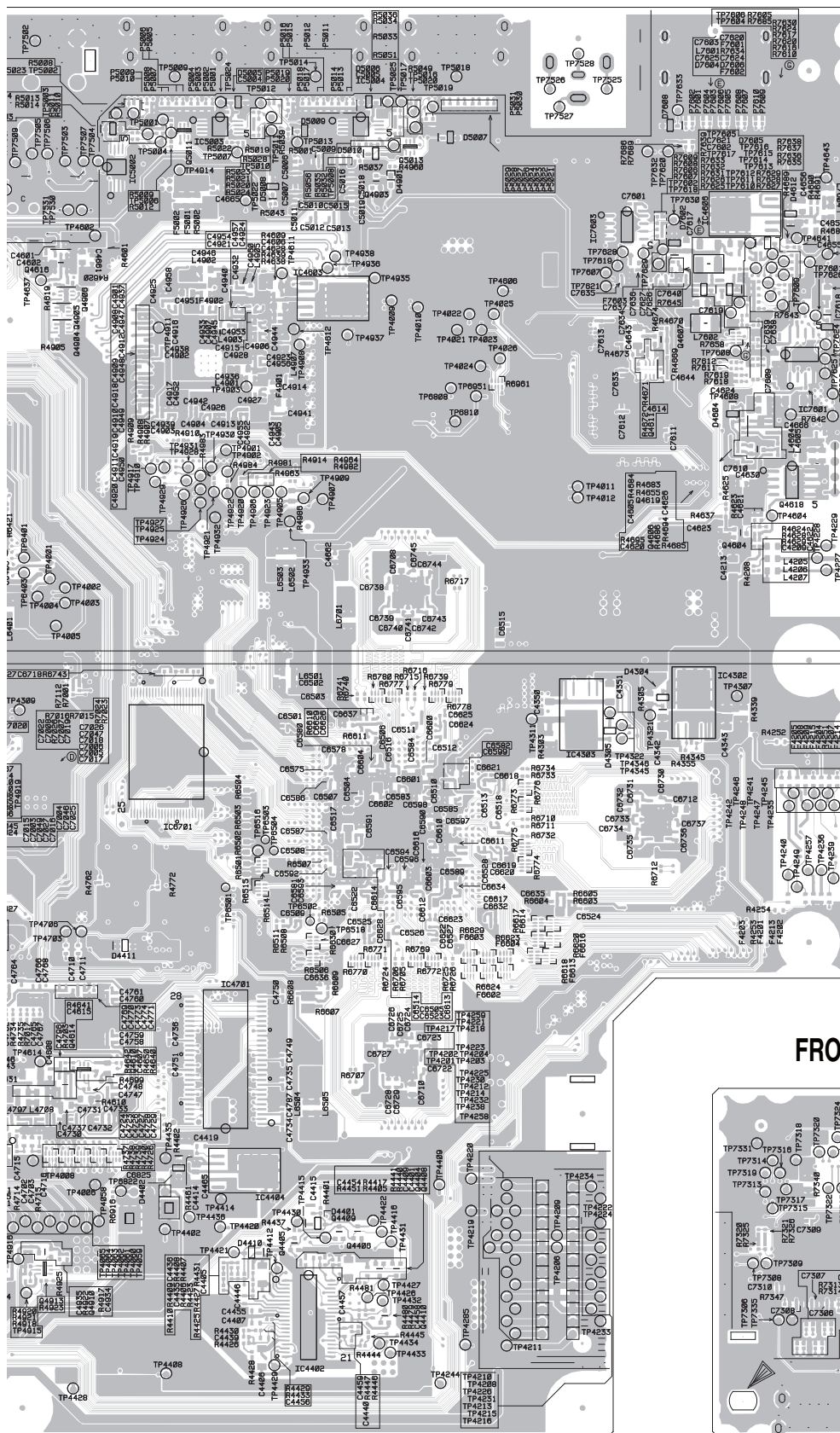
E

C

□

E

F




(ANP2227-A)

(ANP2227-A)

SIDE A[illegible]


4

10. PCB PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).
- | | | | | | | | | | | |
|-------|---|----------------------|-------|-----|-------|---------|---|---|---|---|
| 560 Ω | → | 56 × 10 ¹ | → | 561 | ..... | RD1/4PU | 5 | 6 | 7 | J |
| 47 kΩ | → | 47 × 10 ³ | → | 473 | ..... | RD1/4PU | 4 | 7 | 3 | J |
| 0.5 Ω | → | R50 | ..... |  |  | RN2H | R | 5 | 0 | K |
| 1 Ω | → | 1R0 | ..... |  |  | RS1P | 7 | R | 0 | K |
- Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
- | | | | | | | | | | | | |
|---------|---|-----------------------|---|------|-------|---------|---|---|---|---|---|
| 5.62 kΩ | → | 562 × 10 ¹ | → | 5621 | | RN1/4PC | 5 | 6 | 2 | 1 | F |
|---------|---|-----------------------|---|------|-------|---------|---|---|---|---|---|
- Meaning of the figures and others in the parentheses in the parts list.
- Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
- IC 301 (A, 91, 111) IC NJM2068V

Mark No. Description Part No.

LIST OF ASSEMBLIES

NSP	1..MAIN ASSY (GC MR)	AWV2595
	2..MAIN BLOCK ASSY (GC MR)	AWW1431
	2..FRONT_HDM_USB ASSY (GC MR)	AWW1432
NSP	1..FUKUGO ASSY (GC MR)	AWV2596
	2..LED ASSY (EU MR)	AWW1442
	2..FRONT IO ASSY (EU MR)	AWW1443
	2..KEY ASSY (EU MR)	AWW1445
	2..REAR IO ASSY (GC MR)	AWW1461
	1..POWER SUPPLY UNIT	AXY1223

Mark No. Description Part No.

Unit Name: MAIN BLOCK ASSY(GC MR)
Block Name: BOARD_IF_0 BLOCK(GC)

SEMICONDUCTORS

Q 4001	2SA1576A
Q 4002	UMD2N
Q 4003	2SD2114K
D 4001,4002	1SS352
D 4003-4005	1SS301

MISCELLANEOUS

CN 4001 50P CONNECTOR	AKM1399
CN 4002 FFC CONNECTOR 9P	AKM1378
CN 4003 FFC CONNECTOR 26P	AKM1441
CN 4004 CONNECTOR	AKM1276

RESISTORS

R 4013,4016	RAB4CQ101J
R 4014,4015,4020,4022	RAB4CQ220J
R 4021	RAB4CQ0R0J
R 4023	RAB4CQ220J
Other Resistors	RS1/16SS###J

CAPACITORS

C 4001	DCH1201
C 4003	ACH1421

Block Name: BOARD_IF_1 BLOCK(GC)

SEMICONDUCTORS

Q 4202	RN1902
Q 4206,4207	DTC124EUA
Q 4215	HN1A01FU
Q 4216	RN2902

MISCELLANEOUS

L 4201 CHIP BEEDS FILTER	BTX1039
 L 4205-4207 CHIP BEEDS FILTER	BTX1042
 F 4201-4205,4207-4209 INDUCTOR	CTF1557
 F 4213-4215 INDUCTOR	CTF1557
CN 4201 CONNECTOR	AKM1276

RESISTORS

R 4201-4207,4209-4211	RS1/8SQ0R0J
R 4217,4218	RS1/8SQ0R0J
R 4251,4253	RS1/10SR0R0J
R 4252,4254	RS1/10SR102J

5		6		7		8	
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
Other Resistors			RS1/16SS###J	RESISTORS			
CAPACITORS				R	4402,4412	RS1/8SQ0R0J	A
C	4203	CKSSYB102K50		R	4406,4438	RS1/16SS1203D	
C	4208	DCH1201		R	4407,4425-4427,4441	RS1/16SS3302D	
C	4211	CKSSYB103K16		R	4421	RS1/16SS5602D	
C	4216	CKSSYB104K10		R	4429	RS1/16SS2702D	
Block Name: POWER_0 BLOCK(GC)				R	4440	RS1/16SS1002D	
SEMICONDUCTORS				R	4442,4444,4445	RS1/16SS3302D	
IC	4301	R5523N001B		Other Resistors		RS1/16SS###J	
IC	4302,4309	PQ200WNA1ZPH		CAPACITORS			
IC	4305,4310	NJM2846DL3-05		C	4401,4458	CKSRYB104K16	
IC	4306	BD8903FV		C	4403-4406,4409,4410	DCH1165	
IC	4308	NJM78M12DL1A		C	4407,4455,4457	CKSRYB682K50	B
Q	4303	2SA1576A		C	4411	CCG1232	
D	4301,4304,4306,4308	1SS352		C	4414	DCH1201	
D	4312	RB521S-40					
D	4316	1SS352		C	4426	CKSSYB104K10	
MISCELLANEOUS				C	4427,4465	CKSRYB105K10	
L	4301,4302 CHIP BEEDS FILTER	BTX1039		C	4435	CCSSCH470J50	
L	4304 CHIP BEEDS FILTER	BTX1042		C	4436,4439	CKSSYB152K50	
L	4305 INDUCTOR	BTH1111		C	4437	CCSSCH101J50	
L	4306 CHIP COIL	BTH1126					
RESISTORS				C	4438	CCSSCH330J50	
R	4304,4305,4308,4316	RS1/8SQ0R0J		C	4440	CKSSYB682K25	
R	4325	RS1/16SS3901F		C	4441	CKSSYB221K50	
R	4326	RS1/16SS1003D		C	4447,4448,4451,4452	BCG1059	C
R	4327	RS1/16SS2202F		C	4454	CKSRYB334K10	
R	4340	RS1/16SS2201F					
				C	4462-4464,4466-4468	BCG1059	
R	4343	RS1/16SS4701F		Block Name: POWER_2 BLOCK(GC)			
R	4344	RS1/16SS5101F		SEMICONDUCTORS			
R	4345	RS1/16SS2701F		IC	4601	LTC3407EMSE-2	
R	4346	RS1/16SS1501F		IC	4603,4604,4606	NJM2846DL3-18	
Other Resistors		RS1/16SS###J		Q	4601,4618	RSS090P03	
CAPACITORS				Q	4603,4619	UPA1917TE	
C	4301,4305,4308	CKSRYB105K10		Q	4604,4606,4608,4617	2SC4081	D
C	4303	CKSRYB104K25					
C	4304	CKSSYB682K25		Q	4605	DTC124EUA	
C	4306,4331	BCG1064		Q	4609,4610,4612	RN1902	
C	4309,4310	CEHVAW330M25		Q	4613	RSS100N03	
				Q	4614,4615	RTQ045N03	
C	4311	ACG1147		Q	4616	RTQ040P02	
C	4313,4327	DCH1201		D	4603,4608,4612	1SS352	
C	4315,4316,4342,4343	DCH1165		D	4609,4610	RB551V-30	
C	4347,4348,4352	CKSSYB104K10		MISCELLANEOUS			
Block Name: POWER_1 BLOCK(GC)				⚠	L 4601 CHIP BEEDS FILTER	BTX1039	
SEMICONDUCTORS					L 4602,4603 CHIP INDUCTOR (2.2 UH)	ATH1244	
IC	4402	BD8606FV			L 4604,4605 CHIP BEEDS FILTER	BTX1042	E
IC	4404	NJM2846DL3-33		RESISTORS			
Q	4404-4406	DTC124EUA		R	4601,4604,4606,4607	RS1/8SQ0R0J	
Q	4407,4408	2SC4081		R	4609,4610,4612-4617	RS1/8SQ0R0J	
Q	4409,4410	DTA124EUA		R	4649-4652,4655,4683	RS1/8SQ0R0J	
				R	4659	RS1/16SS1503D	
Q	4413	UPA1917TE		R	4663	RS1/16SS1003D	
Q	4416-4418	SP8M4					
D	4402	1SS352		R	4666	RS1/16SS2003D	
D	4405-4407	RB060M-30		R	4667	RS1/16SS6202D	
MISCELLANEOUS				R	4687,4688	RS1/8SQ0R0J	
L	4401-4406 CHIP BEEDS FILTER	BTX1039		Other Resistors		RS1/16SS###J	F
L	4409-4411 INDUCTOR (2.8 UH)	ATH1243		CAPACITORS			
L	4413-4416 CHIP BEEDS FILTER	BTX1039		C	4602,4604,4615,4621	CKSSYB104K10	

Mark No. Description

C 4606,4609,4654
C 4610,4612
C 4616,4617
C 4618

C 4620,4645,4648
C 4623,4626,4634,4649
C 4628,4638,4640,4641
C 4656

Part No.

CKSRYB105K10
BCG1059
CCSSCH470J50
CKSSYB103K16

CCSSCH101J50
CKSSYB104K10
DCH1201
DCH1201

Mark No. Description

C 4802
C 4803-4805,4807,4809
C 4806,4808,4810
C 4811-4817

C 4818-4820

Part No.

CKSSYB822K16
CKSSYB104K10
CKSSYB473K16
CKSSYB104K10

DCH1201

Block Name: HDMI_RX BLOCK(GC)**SEMICONDUCTORS**

IC 4901
Q 4902
Q 4903
Q 4904-4907,4914
Q 4908

Q 4910
Q 4913
D 4901

SII9135ACTU
DTC124EUA
2SC4081
UMD2N
RN1902

2SA1576A
HN1C01FU
RB520S-30

MISCELLANEOUS

L 4901-4905 CHIP SOLID INDUCTOR
L 4906,4907 CHIP BEEDS FILTER
F 4901,4902 CHIP FERRITE BEADS
X 4901 CRYSTAL (28.322 MHz)

QTL1013
BTX1042
ATF1211
ASS1226

RESISTORS

R 4944
R 4945-4954
R 4976-4979
Other Resistors

RAB4CQ100J
RAB4CQ680J
ACN1275
RS1/16SS###J

CAPACITORS

C 4901-4928,4932,4933
C 4929
C 4930,4931
C 4934,4937-4940
C 4936,4941,4946,4951

CKSSYB102K50
CKSSYB103K16
CCSSCH8R0D50
CKSSYB104K10
DCH1201

C 4942-4945,4947-4950
C 4952-4960

CKSSYB104K10
CKSSYB104K10

Block Name: HDMI_SW BLOCK(GC)**SEMICONDUCTORS**

IC 5001
IC 5002-5004
Q 5007-5009
Q 5011-5013
D 5004-5006

CXB1444R
BR24L02FV-W
UMD2N
RN1902
UDZS6R8(B)

MISCELLANEOUS

F 5001,5002 CHIP SOLID INDUCTOR
JA 5001-5003 HDMI CONNECTOR

DTL1041
AKP1318

RESISTORS

R 5006
R 5058
Other Resistors

RAB4CQ0R0J
RS1/16SS4701F
RS1/16SS###J

CAPACITORS

C 5001
C 5003-5007,5009-5013
C 5014
C 5015,5016,5018,5019

BCG1059
CKSSYB104K10
DCH1201
CKSSYB104K10

Block Name: AV_SW BLOCK(GC)**SEMICONDUCTORS**

IC 5101

R2S11006FT

Block Name: VDEC BLOCK(GC)**SEMICONDUCTORS**

IC 4701
IC 4702
Q 4701,4702

HY57V641620FTP-6
CM0048BF
2SA1576A

MISCELLANEOUS

L 4701 CHIP BEEDS FILTER
L 4702,4703 COIL
L 4706-4708 CHIP BEEDS FILTER
F 4701 INDUCTOR
X 4701 CRYSTAL (28.63636 MHz)

BTX1042
LCYC6R8K2125
BTX1042
CTF1557
ASS1214

RESISTORS

R 4702,4703
R 4710,4720
R 4711,4721
R 4712,4722
R 4713,4715,4723

RS1/8SQ0R0J
RS1/16SS1500F
RS1/16SS2201F
RS1/16SS1101F
RS1/16SS2701F

R 4714
R 4726,4737-4745
R 4746-4752
Other Resistors

RS1/16SS1001F
RAB4CQ470J
RAB4CQ101J
RS1/16SS###J

CAPACITORS

C 4701,4704-4706,4710
C 4702,4703
C 4707-4709,4712,4718
C 4711
C 4713,4717

CKSRYB105K10
CCSRCH300J50
CKSSYB103K16
CKSRYB105K10
CCSSCH330J50

C 4714,4719
C 4715,4716
C 4720
C 4721
C 4722-4736,4738-4774

CCSSCH680J50
CKSSYB102K50
CKSSYB103K16
CEHVAW101M6R3
CKSSYB104K10

C 4737,4793-4797
C 4787
C 4792

DCH1201
CKSSYB104K10
DCH1165

Block Name: ADCC BLOCK(GC)**SEMICONDUCTORS**

IC 4801

AD9985KSTZ-110

MISCELLANEOUS

L 4801,4802 CHIP BEEDS FILTER

BTX1042

RESISTORS

R 4804
R 4805-4808
R 4809-4814
R 4815
Other Resistors

RS1/16SS2701F
RS1/16SS470J
RAB4CQ560J
RAB4CQ103J
RS1/8SQ###J

CAPACITORS

C 4801

CKSSYB823K10

5		6		7		8	
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
MISCELLANEOUS				C	5860,5862,5871,5873		DCH1201
L	5101	CHIP BEEDS FILTER	BTX1042	C	5863,5870,5872,5874		CKSSYB103K16
RESISTORS				C	5875,5877,5886,5888		DCH1201
R	5191		RS1/8SQ0R0J	C	5876,5878,5885,5887		CKSSYB103K16
	Other Resistors		RS1/16SS###J	C	5913		CKSSYB102K50
CAPACITORS				C	5921,5922,5978		DCH1201
C	5105,5131		DCH1201	C	5923,5924		CCSSCH150J50
C	5110-5112,5138-5143		CKSRYB105K10	C	5971,5972,5980		CKSRYB105K10
C	5132-5136		CKSSYB104K10	C	5977		CKSSYB104K10
C	5137		DCH1165	C	5979		CEHVAW470M6R3
Block Name: RGB_SW BLOCK(GC)				Block Name: A_TUNER BLOCK(GC)			
SEMICONDUCTORS				SEMICONDUCTORS			
IC	5501		R2S11001FT	Q	5304,5305		2SA1576A
Q	5537		2SA1576A	Q	5306		HN1B04FU
MISCELLANEOUS				Q	5307		HN1C01FU
L	5501	CHIP BEEDS FILTER	BTX1042	MISCELLANEOUS			
RESISTORS				L	5301	CHIP BEEDS FILTER	BTX1042
R	5513		RAB4CQ101J	L	5302,5303	CHIP COIL	BTH1121
R	5554		RAB4CQ0R0J	F	5301-5304	FERRITE CORE	VTF1080
	Other Resistors		RS1/16SS###J	⚠	U	5301	FRONTEND
CAPACITORS				RESISTORS			
C	5510-5515		CKSRYB105K10	R	5304		RS1/8SQ0R0J
C	5516-5518		CCSSCH221J50	R	5306,5307		RS1/10SR331J
C	5541-5546,5549-5556		CKSSYB103K16	R	5360,5361,5364-5366		RS1/10SR0R0J
C	5547,5548		CCSSCH680J50		Other Resistors		RS1/16SS###J
C	5557-5559,5561,5562		CKSSYB104K10	CAPACITORS			
C	5560,5591		DCH1201	C	5303		BCG1064
Block Name: MSP BLOCK(GC)				C	5305,5307,5311,5323		DCH1201
SEMICONDUCTORS				C	5309		CKSSYB104K10
IC	5801		MSP5651M-QK-C3	C	5314,5315,5331,5332		CCSSCH100D50
IC	5911		NJM4565V	C	5322		CKSRYB682K50
IC	5971		BH3544F	Block Name: VBI_SLICER BLOCK(GE)			
Q	5801,5971		2SC4081	SEMICONDUCTORS			
Q	5866		DTC124EUA	IC	5701		TC90173FG
D	5807,5808		UDZS8R2(B)	D	5701		HSM107S-E
D	5866		1SS301	MISCELLANEOUS			
MISCELLANEOUS				L	5701,5702	CHIP BEEDS FILTER	BTX1042
⚠	X	5801	CRYSTAL (20.25 MHz)	RESISTORS			
RESISTORS				R	5701		RS1/8SQ0R0J
R	5822,5823		RAB4CQ471J	R	5714,5715		RAB4CQ151J
R	5993-5995		RS1/8SQ0R0J	R	5716		RAB4CQ101J
	Other Resistors		RS1/16SS###J		Other Resistors		RS1/16SS###J
CAPACITORS				CAPACITORS			
C	5801-5804,5807-5814		CKSRYB105K10	C	5701		CKSRYB474K10
C	5815,5835,5836		CCG1205	C	5704		CCSSCH680J50
C	5817,5841		CKSSYB473K16	C	5705-5712,5715-5720		CKSSYB104K10
C	5818,5842,5844,5846		CKSSYB103K16	C	5714		DCH1201
C	5824,5861,5864,5865		CCSSCH560J50	Block Name: USB BLOCK(GE)			
C	5843,5845,5847,5855		DCH1201	SEMICONDUCTORS			
C	5851,5853,5911,5912		DCH1165	IC	6401		M66596FP
C	5852,5854,5856,5859		CKSSYB103K16	IC	6402		TC74LCX32FTS1
C	5857		CCSSCH9R0D50	IC	6403,6404		TC74LCX245FTS1
C	5858		CCSSCH100D50	MISCELLANEOUS			
				L	6401-6403	CHIP BEEDS FILTER	BTX1042
				⚠	X	6401	CRYSTAL RESONATOR

Mark No. Description

Part No.

Mark No. Description

Part No.

RESISTORS

R 6401-6403
R 6408
R 6410
R 6411-6420
Other Resistors

RS1/8SQ0R0J
RS1/16SS5601F
RAB4CQ103J
RAB4CQ101J
RS1/16SS###J

CAPACITORS

C 6501,6504-6513,6518
C 6502,6514,6523
C 6503,6515,6516
C 6517
C 6519-6522,6524

CKSSYB104K10
DCH1201
CKSSYB102K50
CCG1232
CKSSYB102K50

CAPACITORS

C 6401
C 6402
C 6403-6410,6412,6414
C 6411,6413

CCSSCH150J50
CCSSCH220J50
CKSSYB104K10
DCH1201

C 6525-6528

C 6576
C 6577
C 6578,6580-6587
C 6589-6608,6610-6614

CKSSYB104K10
CCSSCH100D50
CCSSCH120J50
CKSRYB105K10
CKSRYB105K10

Block Name: AV_IO_0 BLOCK(GE)

Block Name: ARIA_1 BLOCK(GC)

MISCELLANEOUS

JA 7401 9P PIN JACK
JA 7402 3P 4PIN MINIDIN (S)

AKB1319
AKP1280

MISCELLANEOUS

L 6601 CHIP BEEDS FILTER
F 6601-6616 FERRITE BEADS ARRAY

BTX1042
ATF1228

RESISTORS

All Resistors

RS1/10SR####F

RESISTORS

R 6603,6604,6607
R 6609-6611
R 6613-6627,6629
R 6628
R 6630

RS1/16SS2201F
RS1/16SS2201F
RAB4CQ101J
RAB4CQ330J
RAB4CQ220J

CAPACITORS

C 7401-7403
C 7404-7409
C 7410-7415
C 7416-7421

CKSSYB473K16
CKSSYB103K16
CKSSYB102K50
CKSRYB105K10

Other Resistors

RS1/16SS###J

Block Name: AV_IO_1 BLOCK(GC)

CAPACITORS

C 6615
C 6616-6629
C 6632
C 6634

DCH1201
CKSSYB104K10
CCSSCH221J50
CKSRYB105K10

SEMICONDUCTORS

Q 7502
Q 7505,7506

UMD2N
2SD2114K

Block Name: ARIA_DDR BLOCK(GC)

MISCELLANEOUS

F 7501-7503 INDUCTOR
JA 7501 9P PIN JACK
JA 7503 MINI JACK (4P)

CTF1557
AKB1330
AKN1073

SEMICONDUCTORS

NSP IC 6701
IC 6702-6704

AGC1091
EDD1232ABBH-5C-E

RESISTORS

R 7501
R 7503
R 7515-7520
R 7527,7528
Other Resistors

RS1/10SR151J
RS1/10SR0R0J
RS1/10SR75R0F
RS1/10SR221J
RS1/16SS###J

MISCELLANEOUS

L 6701-6703 CHIP BEEDS FILTER

BTX1042

RESISTORS

R 6745-6780
Other Resistors

RAB4CQ470J
RS1/16SS###J

CAPACITORS

C 7501-7506
C 7507,7508,7534-7536
C 7513,7514
C 7515,7516
C 7517

CKSRYB105K10
CKSSYB471K50
CKSSYB104K10
CCG1205
ACH1454

CAPACITORS

C 6701-6707
C 6708,6710,6712,6714
C 6718
C 6722-6745

CKSSYB104K10
DCH1201
CKSSYB103K16
CKSRYB105K10

Block Name: ARIA_0 BLOCK(GC)

Block Name: IF_UCOM BLOCK(GC)

SEMICONDUCTORS

IC 6501

PD6568A

SEMICONDUCTORS

IC 6801
IC 6802,6803
IC 6805
NSP IC 6811
IC 6951
Q 6812,6813,6819,6820

PST3628UR
TC74VHC126FTS1
TC74VHC08FTS1
AGC1086
MAX3232CPW
DTC124EUA

MISCELLANEOUS

L 6501-6503 CHIP BEEDS FILTER
L 6504,6505 CHIP BEEDS FILTER
L 6506-6509 INDUCTOR
X 6501 CRYSTAL (27 MHz)

BTX1042
BTX1039
LCYC1R0K1608
ASS1225

NSP

Q 6901
D 6803

UMD2N
1SS352

RESISTORS

R 6501-6504
R 6506
R 6514,6515
Other Resistors

RS1/8SQ0R0J
RAB4CQ220J
RAB4CQ103J
RS1/16SS###J

MISCELLANEOUS

X 6801 CERAMIC OSCILLATOR
X 6802 CRYSTAL OSCILLATOR

CSS1616
ASS1212

5			7			8		
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	
<u>RESISTORS</u>				Block Name: EMMA2_MEM BLOCK(GC)				
R	6802,6806		RS1/8SQ0R0J	<u>SEMICONDUCTORS</u>				
R	6880,6885		RAB4CQ103J					
R	6883		RAB4CQ473J					
R	6884		RAB4CQ471J					
R	6961		RAB4CQ101J	NSP	IC 7201		EDD5116AFTA-5B-E	
Other Resistors			RS1/16SS###J		IC 7202		AGC1090	
					IC 7203		LP2995M	
<u>CAPACITORS</u>				<u>MISCELLANEOUS</u>				
C	6801		CKSSYB102K50	L	7201	CHIP BEEDS FILTER	BTX1042	
C	6802		CKSSYB472K16	<u>RESISTORS</u>				
C	6803,6804		CKSSYB471K50					
C	6805,6806		CCSSCH8R0D50					
C	6807,6809,6811		CKSSYB104K10					
C	6808,6812		DCH1201	R	7213		RS1/16SS1500F	
C	6810		CKSSYB103K16	R	7243-7246,7257-7259		RAB4CQ101J	
C	6814-6818,6820,6821		CKSSYB104K10	R	7247-7254,7256		RAB4CQ220J	
C	6951-6955		CKSSYB104K10	R	7255,7267		RAB4CQ103J	
				R	7260,7261,7268-7270		RAB4CQ560J	
Block Name: EMMA2 BLOCK(GC)				R	7262,7272-7275		RAB4CQ101J	
<u>SEMICONDUCTORS</u>				Other Resistors			RS1/16SS###J	
IC	7002		TC74VHC08FTS1	<u>CAPACITORS</u>				
IC	7003		UPD61123F1-100KA3A					
IC	7004		BR24L64F-W					
IC	7005		TC7WHU04FU					
IC	7006		TC74HC4066AFT	C	7201		CKSRYB105K10	
Q	7001		2SJ461A	C	7202-7204		BCG1059	
Q	7002,7003,7006		DTC124EUA	C	7205,7206,7225		DCH1201	
Q	7005,7008		SSM6N17FU	C	7207-7221,7223		CKSSYB104K10	
Q	7007,7010		UMD2N	C	7226		CEHVAW331M6R3	
<u>MISCELLANEOUS</u>				Block Name: DP_TX BLOCK				
L	7001-7003	CHIP BEEDS FILTER	BTX1042	<u>SEMICONDUCTORS</u>				
F	7001	FERRITE CORE	VTF1091					
X	7001	CRYSTAL (27 MHz)	ASS1225					
<u>RESISTORS</u>				<u>MISCELLANEOUS</u>				
R	7026-7028		RS1/16SS2000D	L	7601,7602	CHIP INDUCTOR	ATH1254	
R	7029,7036		RS1/16SS6200D	L	7603-7605	CHIP BEEDS FILTER	BTX1042	
R	7033		RS1/16SS3300D	F	7601-7603	CHIP FERRITE BEADS	ATF1211	
R	7035		RS1/16SS2200D	JA	7601	DP CONNECTOR	AKP1340	
R	7045,7067,7070,7073		RAB4CQ103J	X	7601	CRYSTAL (27 MHz)	ASS1225	
R	7060-7064,7066,7068		RAB4CQ101J	<u>RESISTORS</u>				
R	7065,7075		RAB4CQ470J					
R	7069,7071,7083,7084		RAB4CQ101J					
R	7072		RAB4CQ221J					
R	7074		RAB4CQ103J	R	7604		RS1/8SQ0R0J	
R	7081		RAB4CQ222J	R	7645		RS1/10SR2490F	
R	7087-7091		RAB4CQ101J	R	7649-7657,7662		RS1/16SS10R0F	
R	7109		RS1/8SQ0R0J	R	7658		RAB4CQ0R0J	
Other Resistors			RS1/16SS###J	Other Resistors			RS1/16SS###J	
<u>CAPACITORS</u>				<u>CAPACITORS</u>				
C	7001,7003-7011		CKSRYB105K10	C	7601,7608-7614,7616		CKSSYB104K10	
C	7014		CKSSYB102K50	C	7602		CKSSYB471K50	
C	7029,7030		CCSSCH120J50	C	7603		BCG1059	
C	7031,7032		CCSSCH470J50	C	7604,7605		CCSSCH120J50	
C	7035-7040,7043		CKSSYB104K10	C	7606,7607,7617,7619		DCH1201	
C	7041,7044,7049		DCH1201	C	7618,7621,7624-7627		CKSSYB104K10	
C	7045-7048,7050,7051		CKSSYB104K10	C	7620,7639		DCH1201	
				C	7629-7638,7640-7650		CKSSYB104K10	
Unit Name: FRONT_HDM_USB ASSY(GC MR)				<u>MISCELLANEOUS</u>				
				L	7301,7302	CHIP BEEDS FILTER	BTX1042	
				JA	7303	USB CONNECTOR	VKB1248	
				CN	7304	CONNECTOR	AKM1291	

	1		2		3		4	
	Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
					C	9410,9411		CKSSYB104K10
A	Unit Name: LED ASSY(EU MR)				Unit Name: REAR IO ASSY(GC MR)			
	<u>SEMICONDUCTORS</u>				<u>SEMICONDUCTORS</u>			
	D	9401		SML-521MDW	D	8601		1SS301
	D	9402		TLRV1022				
	D	9403		SML E12BC7T(NP)				
	<u>MISCELLANEOUS</u>				<u>MISCELLANEOUS</u>			
	⚠	L	9408-9410 CHIP SOLID INDUCTOR	QTL1013	JA 8602	JACK		VKB1159
		CN	9402 L-PLUG (6P)	KM200NA6L	CN	8602 FFC CONNECTOR 9P RA		AKM1381
					CN	8603 9P D-SUB SOCKET		AKP1213
	<u>RESISTORS</u>				<u>RESISTORS</u>			
			All Resistors	RS1/10SR###J		All Resistors		RS1/16SS###J
B	<u>CAPACITORS</u>				<u>CAPACITORS</u>			
	C	9404,9406,9407		CKSSYB103K16	C	8604		CKSSYB471K50
	Unit Name: FRONT IO ASSY(EU MR)							
	<u>SEMICONDUCTORS</u>							
	IC	8501		BR24L01AFJ-W				
	IC	8502		TC74VHC08FTS1				
	Q	8501		DTC124EUA				
	Q	8502-8504		2SC4081				
	D	8507		1SS301				
C	D	8508		UDZS5R1(B)				
	<u>MISCELLANEOUS</u>							
	JA	8501	PIN JACK (3P)	AKB1303				
	JA	8503	MINI JACK	AKN1085				
	CN	8501	FFC CONNECTOR 26P	AKM1441				
	CN	8503	15P D-SUB SOCKET	AKP1214				
	<u>RESISTORS</u>							
	R	8501,8508		RST1/2SP120J				
	R	8506,8510-8512		RS1/10SR75R0F				
	R	8514		RAB4CQ473J				
D	R	8515,8516		RAB4CQ101J				
	R	8517		RAB4CQ222J				
			Other Resistors	RS1/16SS###J				
	<u>CAPACITORS</u>							
	C	8501,8510-8512		CKSRYB105K10				
	C	8502,8509		CKSSYB104K10				
	C	8503,8504,8513,8514		CKSSYB102K50				
	C	8507,8508		ACH1454				
	C	8515		CKSRYB104K16				
E	Unit Name: KEY ASSY(EU MR)							
	<u>SEMICONDUCTORS</u>							
	Q	9401		HN1B04FU				
	TH	9401		TH05-3H103F				
	<u>MISCELLANEOUS</u>							
	⚠	L	9401-9406 CHIP SOLID INDUCTOR	QTL1013				
	S	9401-9406	PUSH SWITCH	CSG1155				
	CN	9401	L-PLUG (7P)	KM200NA7L				
	<u>RESISTORS</u>							
	R	9407		RS1/10SR4701F				
F			Other Resistors	RS1/16SS###J				
	<u>CAPACITORS</u>							
	C	9409		CKSSYB103K16				
166				KRP-M01				

Pioneer

Service Manual



KRP-M01

ORDER NO.
ARP3509

MEDIA RECEIVER

KRP-M01

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-M01	WYSIXK5	AC 220 V to 240 V	
KRP-M01	WYSXJ5	AC 220 V to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
KRP-M01	ARP3508	EXPLODED VIEWS, BLOCK DIAGLAM, ADJUSTMENT, etc



For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
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T-ZS-001 SEPT. 2008 Printed in Japan

A

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

B

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2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



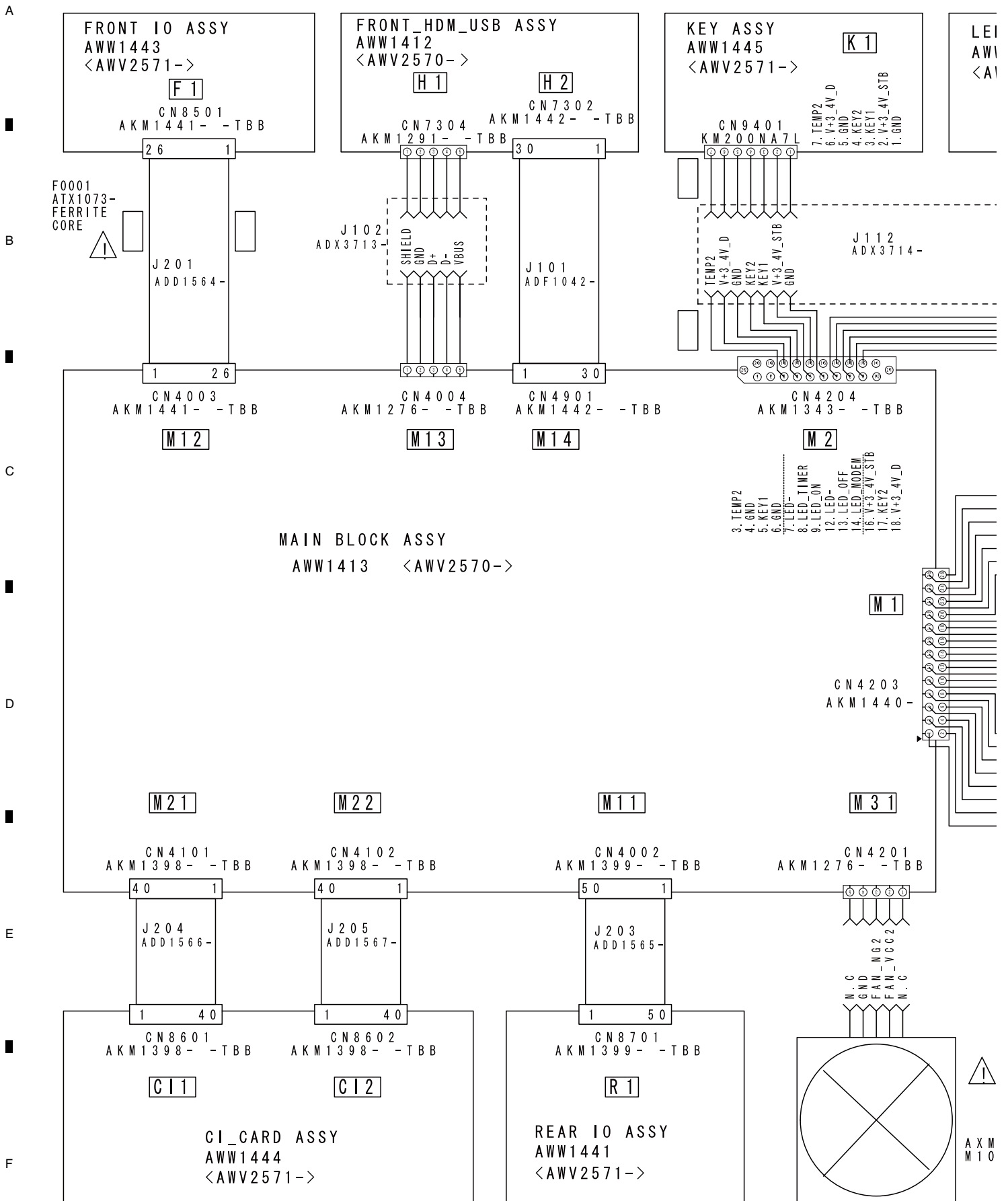
To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

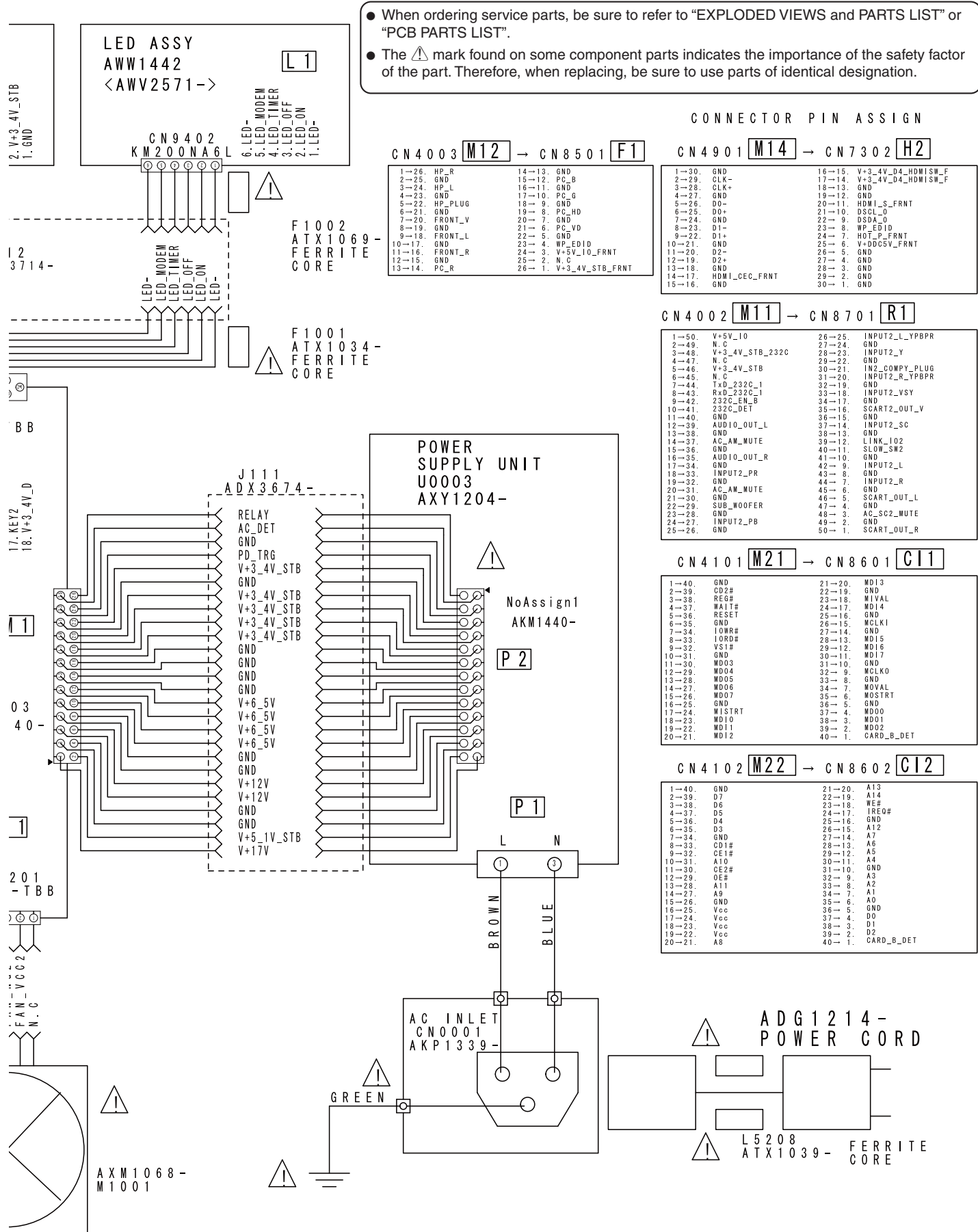
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10. SCHEMATIC DIAGRAM

10.1 OVERALL CONNECTION DIAGRAM





A

B

C

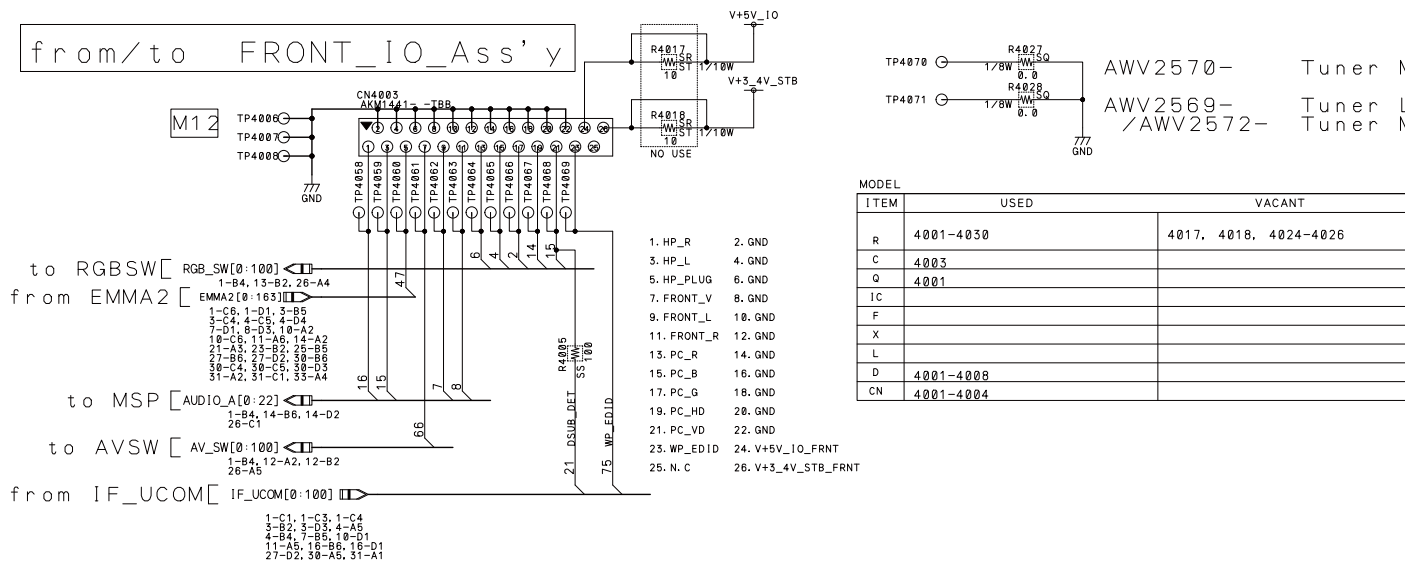
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E

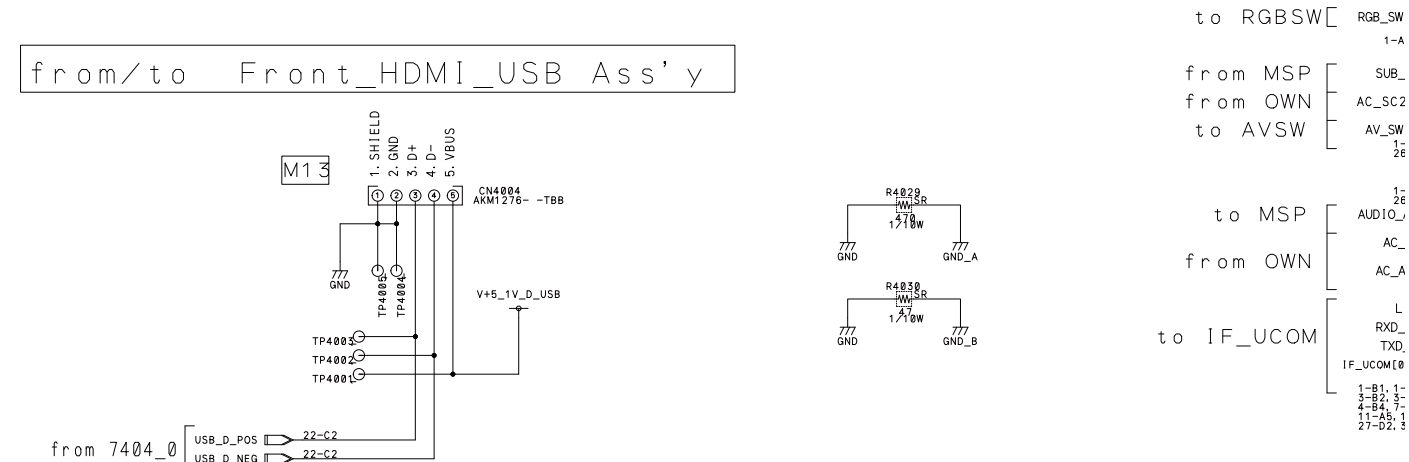
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10.2 MAIN BLOCK ASSY (1/33) [BOARD_IF_0 BLOCK]

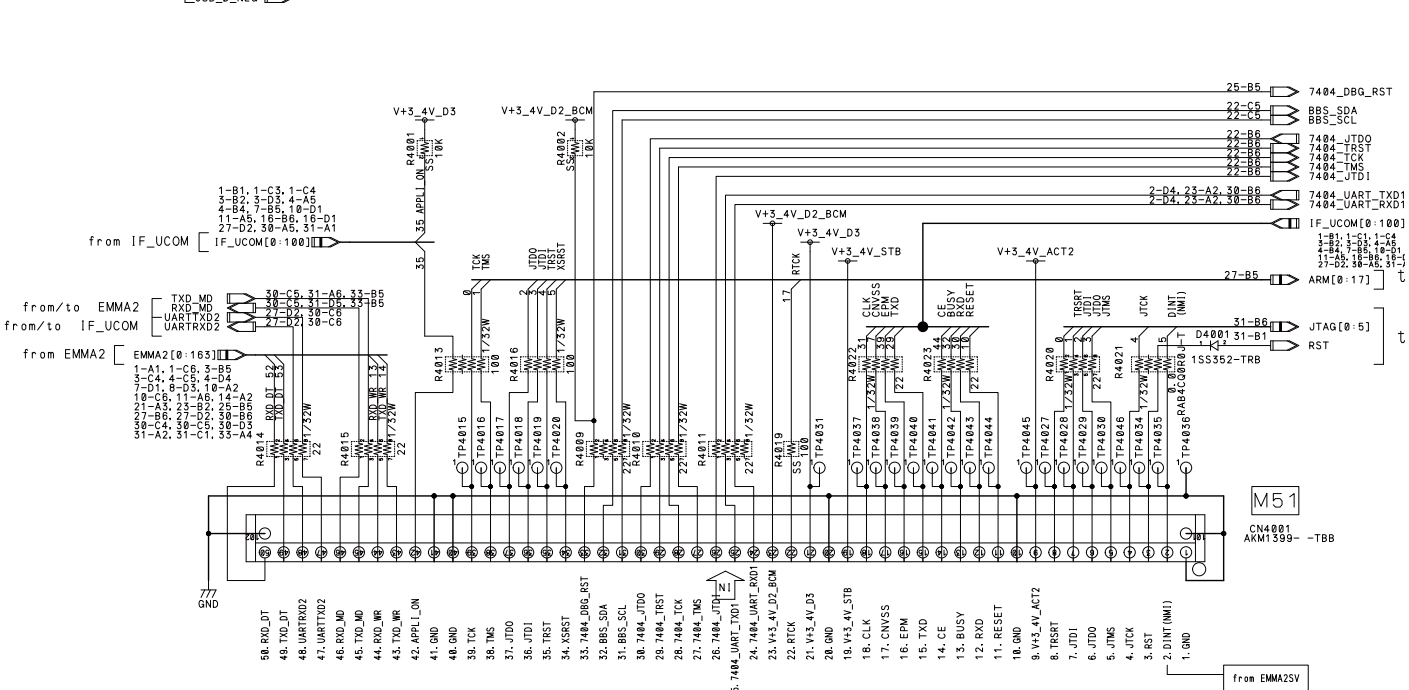
A



B



C



F

from/to EMMA/ARIA JIGU Board

△

F

A

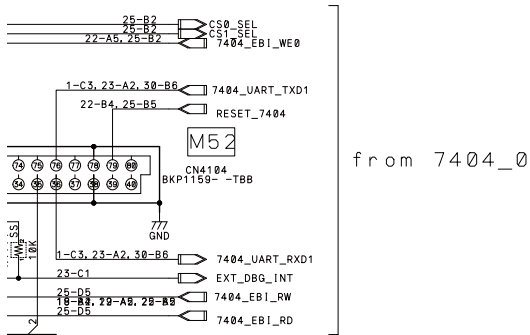
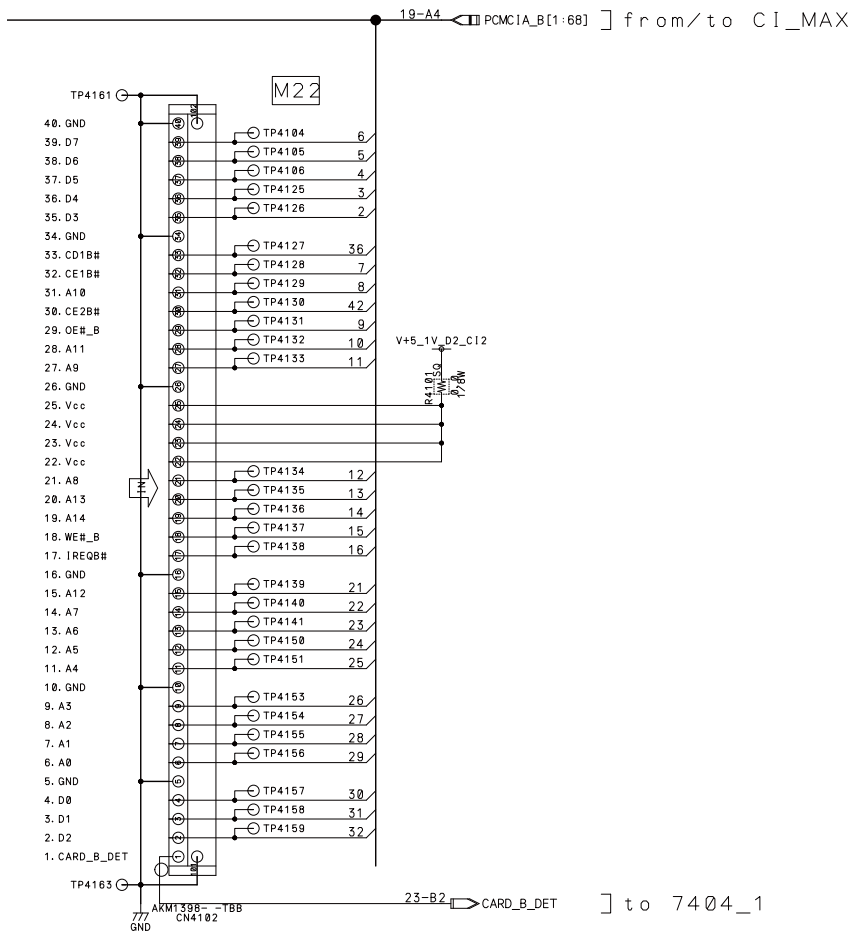
B

C

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F



MODEL		
ITEM	USED	VACANT
R	4101, 4114	
C		
Q		
IC		
F		
X		
L		
D		
CN	4101-4102, 4104	

MAIN ASSY (MR_EU) (02/34)
BOARD_IF_1 BLOCK

AWV2570 : AWW1413
AWV2569 : AWW1413
AWV2572 : AWW1411

10.4 MAIN BLOCK ASSY (3/33) [BOARD_IF_2 BLOCK]

A

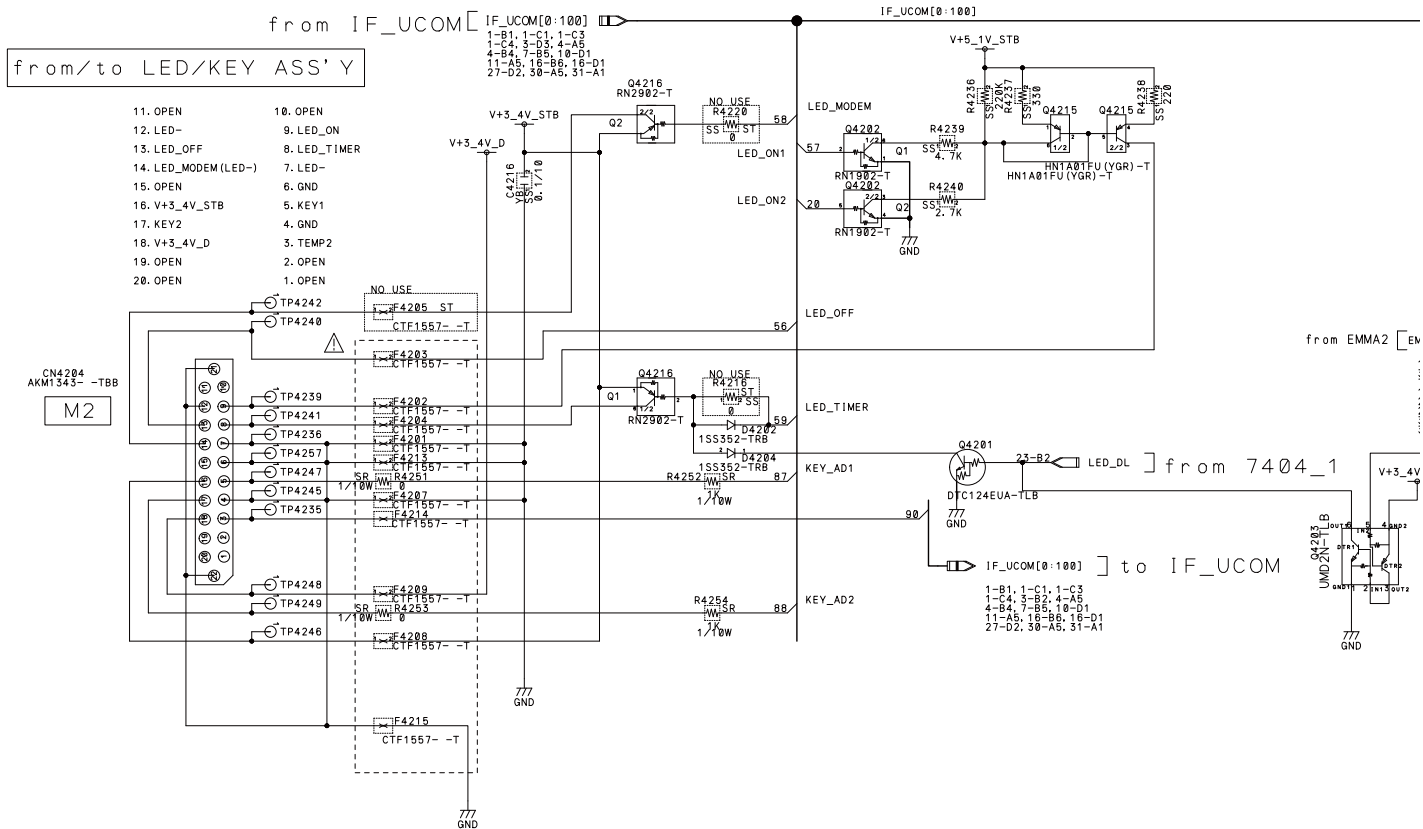
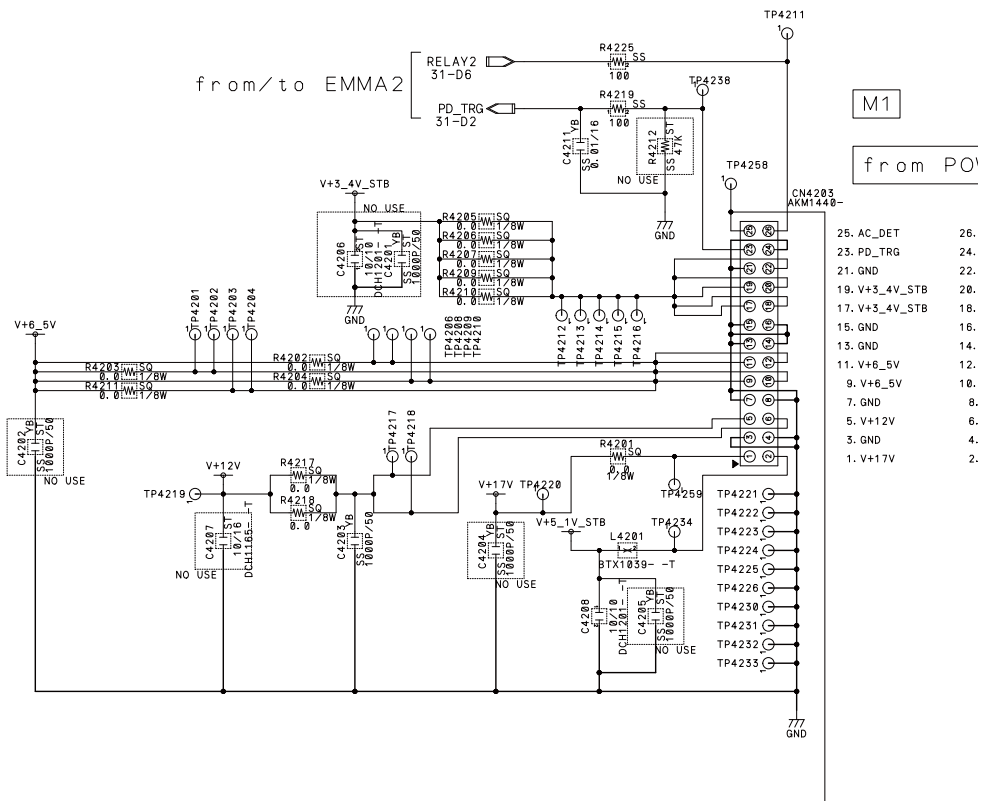
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10.5 MAIN BLOCK ASSY (4/33) [POWER_0 BLOCK]

A

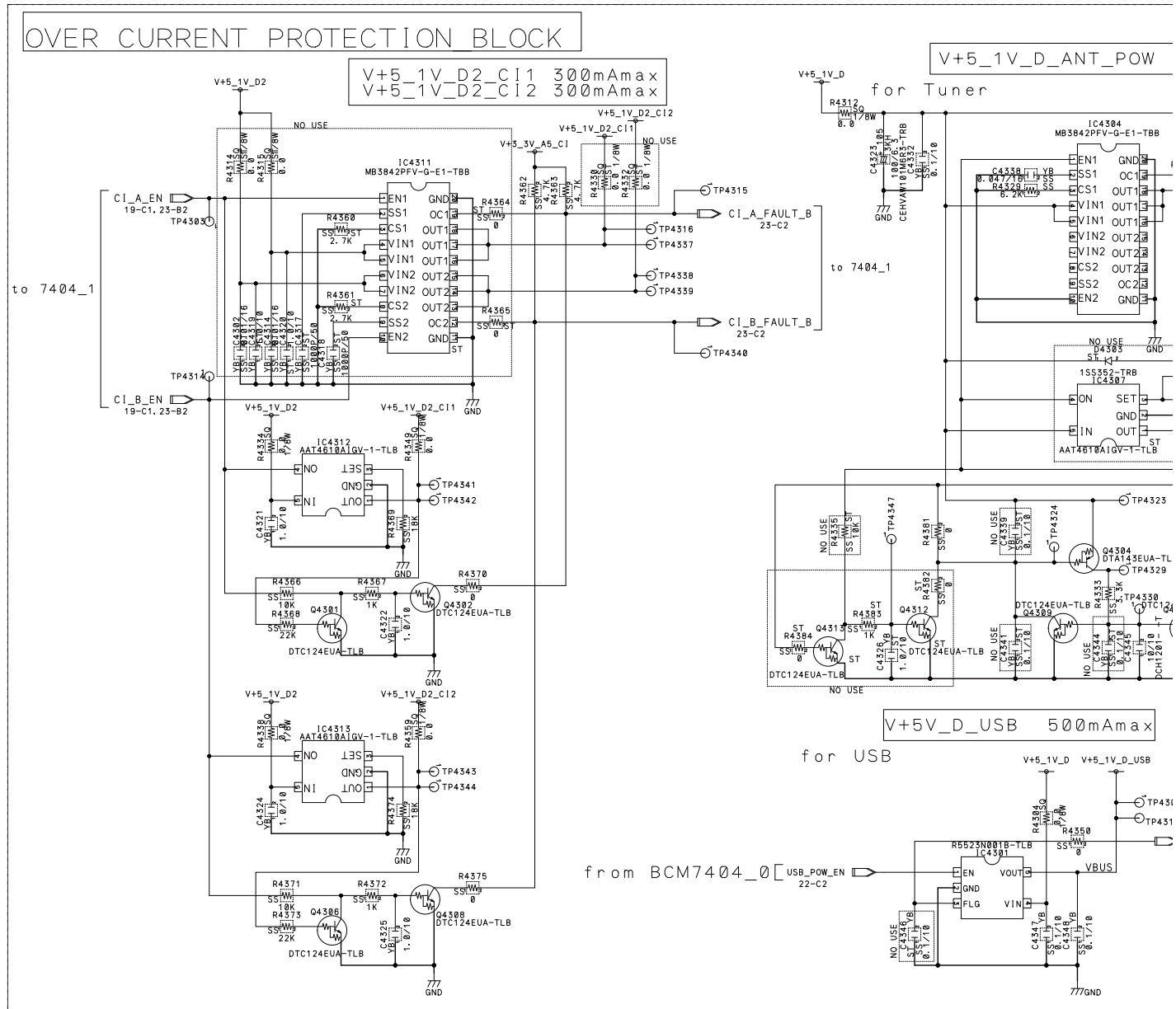
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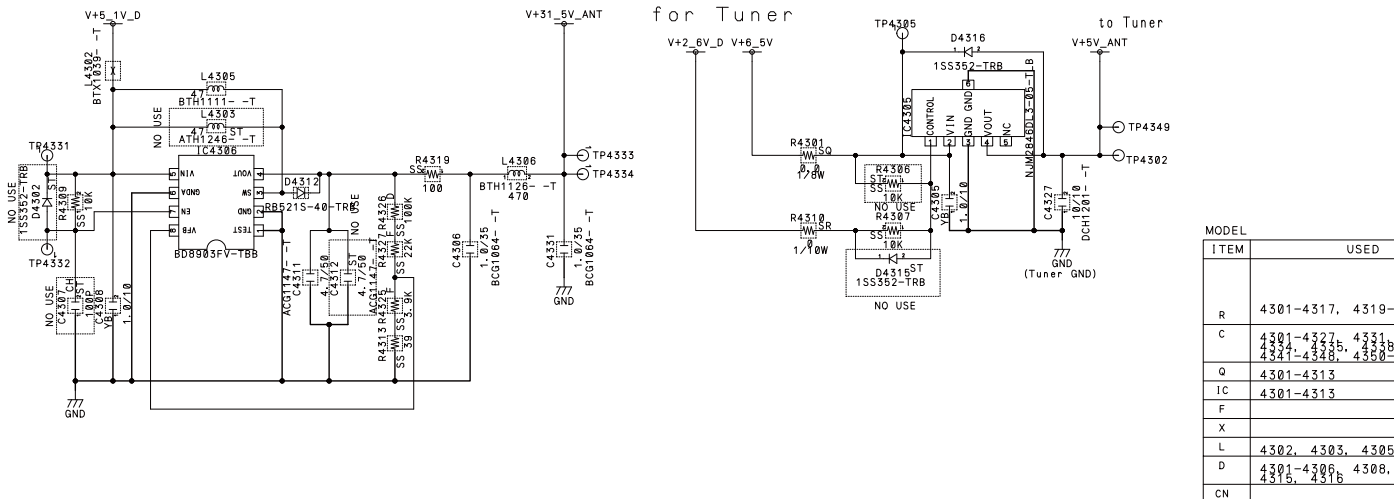
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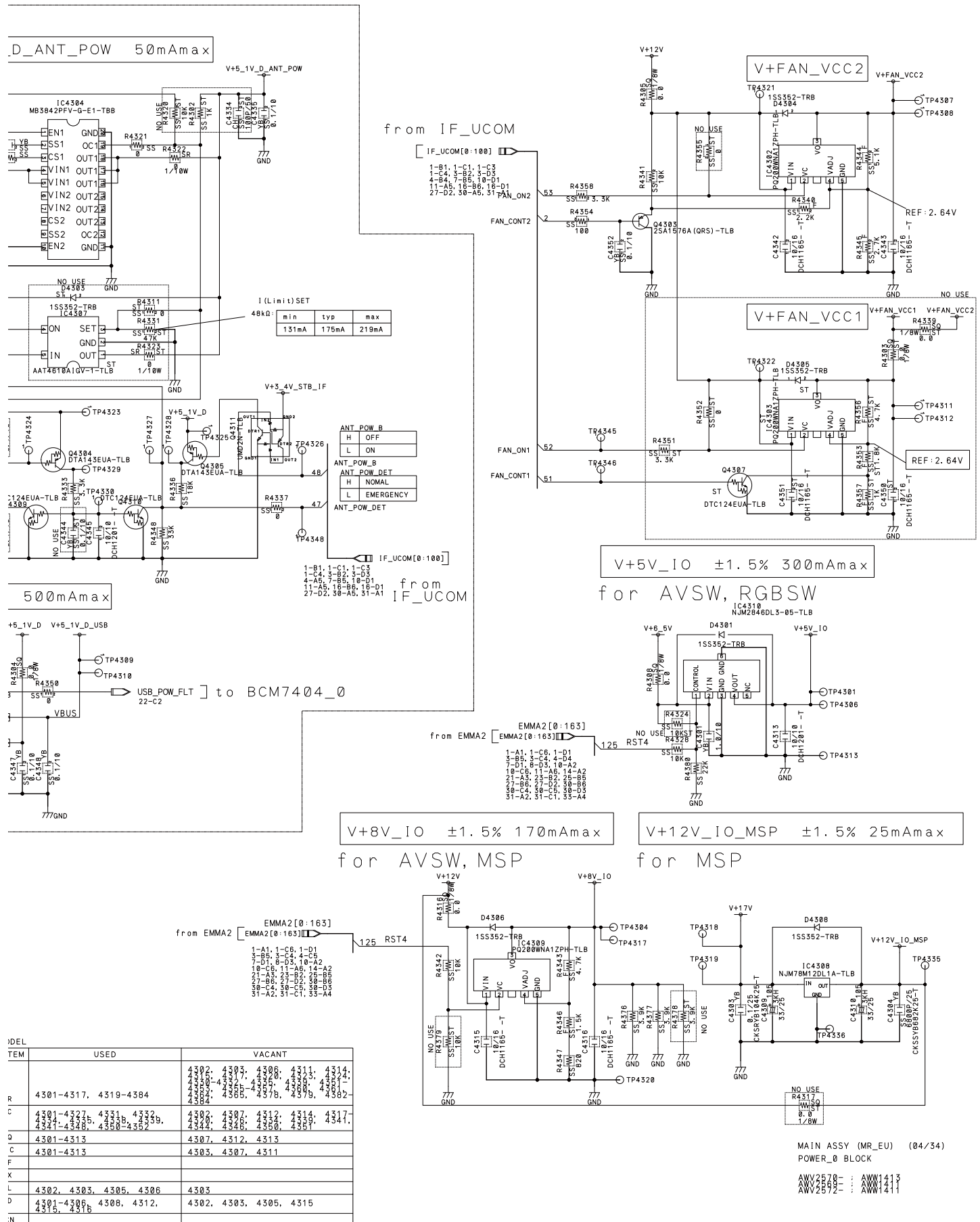


V+31_5V_ANT $\pm 3.5\%$ 3mAmax

V+5V_ANT $\pm 1.5\%$ 300mAmax

for Tuner





4

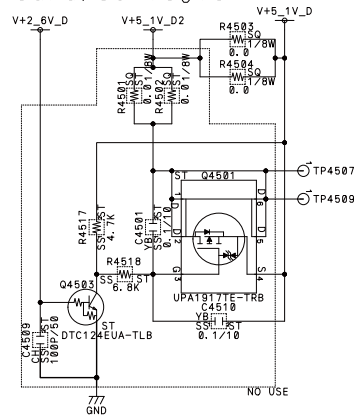


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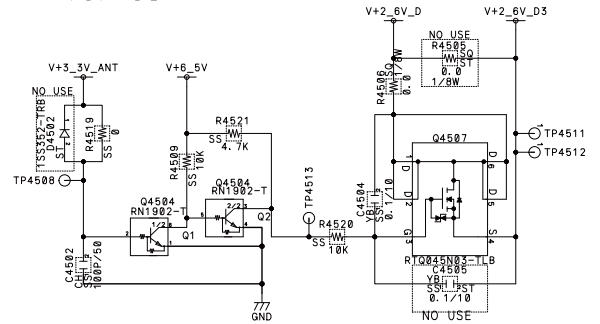
V+5_1V_D2 +1.7, -2.9% 850mAmax

for CS_FE, CSDEM,
CI_card, CI logic



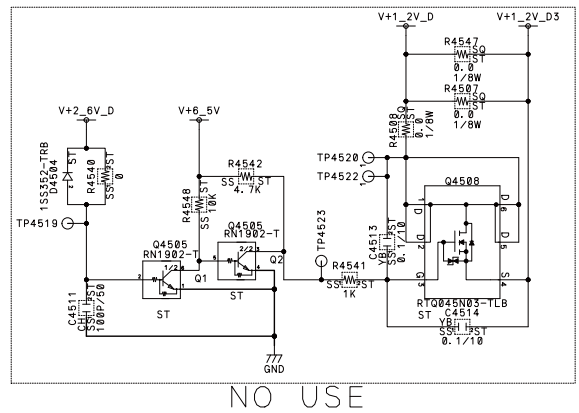
V+2_6V_D3 110mAmax

for CS



V+1_2V_D3 +1.7%-4.1% 840mAmax

for AAC



NO USE

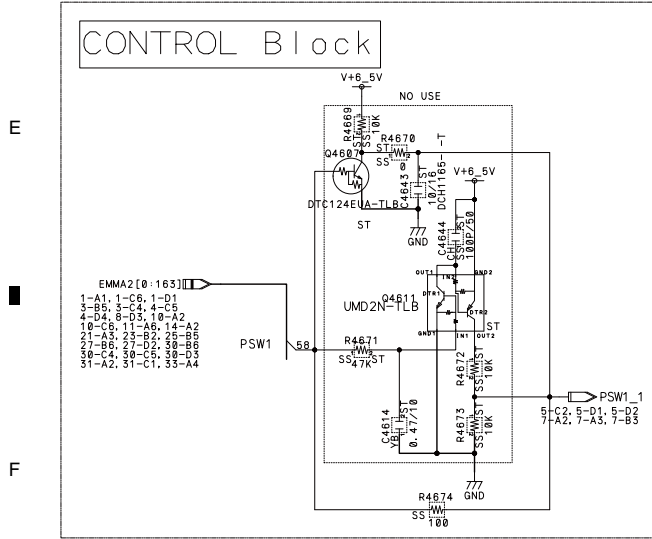
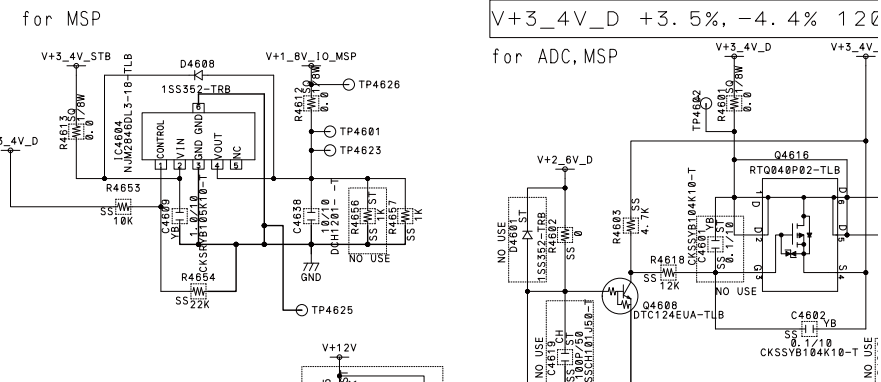
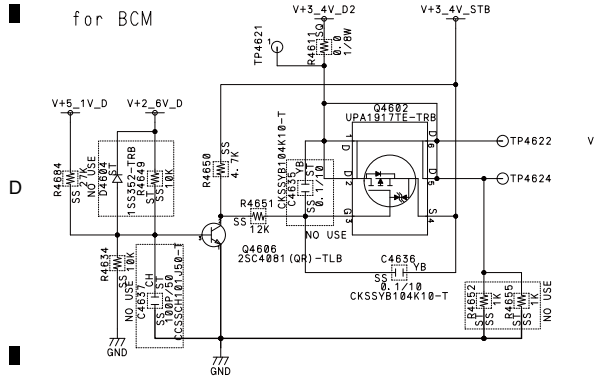
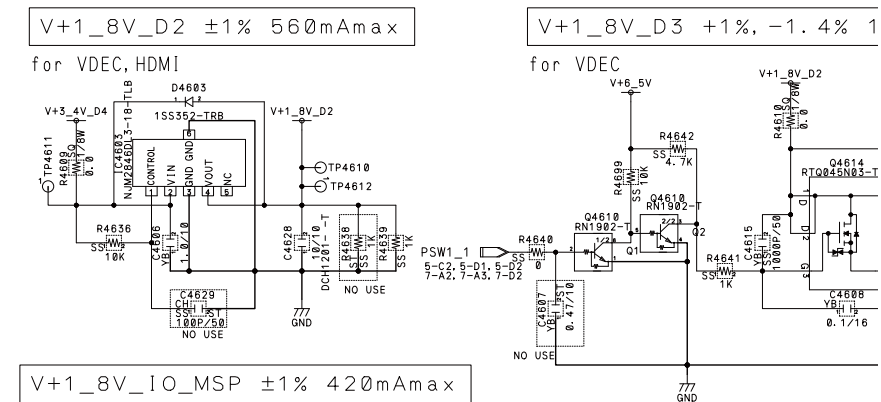
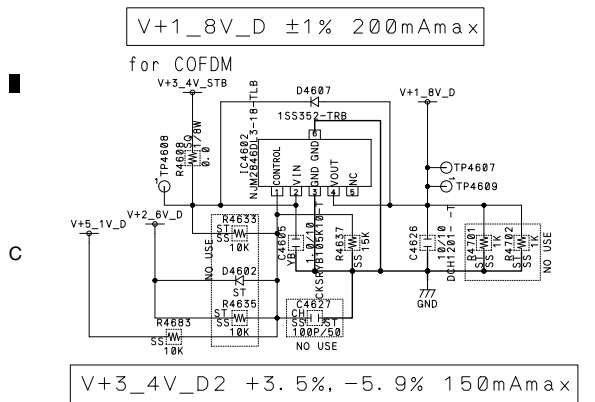
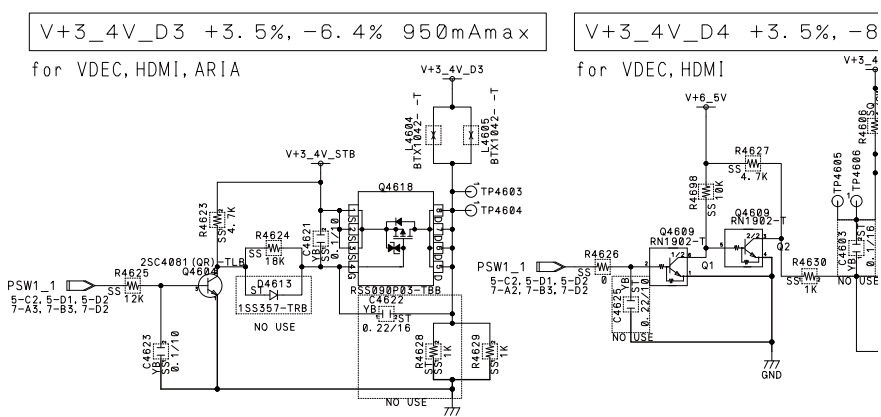
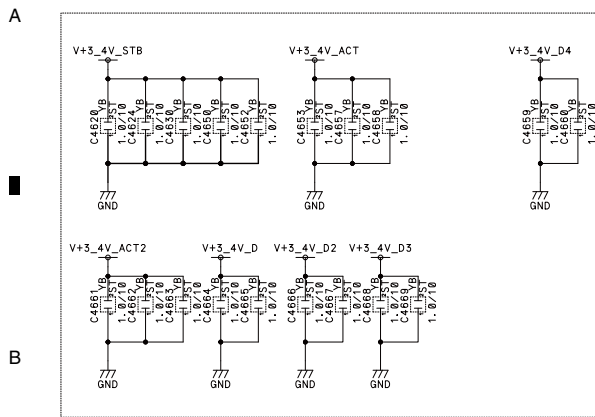
MODEL

ITEM	USED	VACANT
R	4501-4549	4501, 4502, 4503, 4504, 4505, 4506, 4507, 4508, 4509, 4510, 4511, 4512, 4513, 4514, 4515, 4516, 4517, 4518, 4519, 4520, 4521, 4522, 4523, 4524, 4525, 4526, 4527, 4528, 4529, 4530, 4531, 4532, 4533, 4534, 4535, 4536, 4537, 4538, 4539, 4540, 4541, 4542, 4543, 4544, 4545, 4546, 4547, 4548, 4549
C	4501-4510, 4527-4530, 4535-4555	4501, 4502, 4503, 4504, 4505, 4506, 4507, 4508, 4509, 4510, 4511, 4512, 4513, 4514, 4515, 4516, 4517, 4518, 4519, 4520, 4521, 4522, 4523, 4524, 4525, 4526, 4527, 4528, 4529, 4530, 4531, 4532, 4533, 4534, 4535, 4536, 4537, 4538, 4539, 4540, 4541, 4542, 4543, 4544, 4545, 4546, 4547, 4548, 4549, 4550, 4551, 4552, 4553, 4554, 4555
Q	4501-4505, 4507-4510	4501, 4503, 4505, 4508
IC	4501, 4503	
F		
X		
L	4501-4507	4504
D	4501-4505, 4508-4513	4502-4505, 4512
CN		

MAIN ASSY (MR_EU) (06/34)
POWER_2 BLOCK

AWV2570- : AWW1413
AWV2568- : AWW1411
AWV2572- : AWW1411

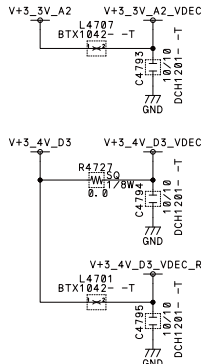
10.8 MAIN BLOCK ASSY (7/33) [POWER_3 BLOCK]



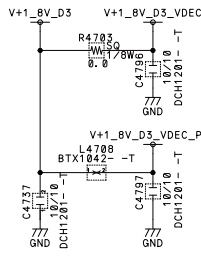
MODEL	USED	VACANT
R	4601-4604, 4606-4620, 4623-4700	4605, 4607, 4608, 4609, 4610, 4611, 4612, 4613, 4614, 4615, 4616, 4617, 4618, 4619, 4621, 4622, 4624, 4625, 4626, 4627, 4628, 4629, 4630, 4631, 4632, 4633, 4634, 4635, 4636, 4637, 4638, 4639, 4640, 4641, 4642, 4643, 4644, 4645, 4646, 4647, 4648, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682, 4683, 4684, 4685, 4686, 4687, 4688, 4689, 4690, 4691, 4692, 4693, 4694, 4695, 4696, 4697, 4698, 4699, 4700
C	4601-4669	4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682, 4683, 4684, 4685, 4686, 4687, 4688, 4689, 4690, 4691, 4692, 4693, 4694, 4695, 4696, 4697, 4698, 4699, 4700
Q	4601-4619	4620, 4621, 4622, 4623, 4624, 4625, 4626, 4627, 4628, 4629, 4630, 4631, 4632, 4633, 4634, 4635, 4636, 4637, 4638, 4639, 4640, 4641, 4642, 4643, 4644, 4645, 4646, 4647, 4648, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682, 4683, 4684, 4685, 4686, 4687, 4688, 4689, 4690, 4691, 4692, 4693, 4694, 4695, 4696, 4697, 4698, 4699, 4700
IC	4601-4604, 4606	4605, 4607, 4608, 4609, 4610, 4611, 4612, 4613, 4614, 4615, 4616, 4617, 4618, 4619, 4620, 4621, 4622, 4623, 4624, 4625, 4626, 4627, 4628, 4629, 4630, 4631, 4632, 4633, 4634, 4635, 4636, 4637, 4638, 4639, 4640, 4641, 4642, 4643, 4644, 4645, 4646, 4647, 4648, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682, 4683, 4684, 4685, 4686, 4687, 4688, 4689, 4690, 4691, 4692, 4693, 4694, 4695, 4696, 4697, 4698, 4699, 4700
F		
X		
L	4601-4605	
D	4601-4613	4604, 4605, 4606, 4607, 4608, 4609, 4610, 4611, 4612, 4613, 4614, 4615, 4616, 4617, 4618, 4619, 4620, 4621, 4622, 4623, 4624, 4625, 4626, 4627, 4628, 4629, 4630, 4631, 4632, 4633, 4634, 4635, 4636, 4637, 4638, 4639, 4640, 4641, 4642, 4643, 4644, 4645, 4646, 4647, 4648, 4649, 4650, 4651, 4652, 4653, 4654, 4655, 4656, 4657, 4658, 4659, 4660, 4661, 4662, 4663, 4664, 4665, 4666, 4667, 4668, 4669, 4670, 4671, 4672, 4673, 4674, 4675, 4676, 4677, 4678, 4679, 4680, 4681, 4682, 4683, 4684, 4685, 4686, 4687, 4688, 4689, 4690, 4691, 4692, 4693, 4694, 4695, 4696, 4697, 4698, 4699, 4700
CN		

10.9 MAIN BLOCK ASSY (8/33) [VDEC BLOCK]

A



B



C

from AV_SW

from/to RGB_SW

D

E

F

from AV_SW

SUB_C

SUB_Y

12-B5

12-B5

R4762

R4772

SS1W100

SS1W100

TP4704

TP4705

from EMMA2

from AV_SW

12-B5

12-B5

R4762

R4772

SS1W100

SS1W100

TP4704

TP4705

from EMMA2

from AV_SW

12-B5

12-B5

R4762

R4772

SS1W100

SS1W100

TP4704

TP4705

from EMMA2

from AV_SW

12-B5

12-B5

R4762

R4772

SS1W100

SS1W100

TP4704

TP4705

from EMMA2

from AV_SW

12-B5

12-B5

R4762

R4772

SS1W100

SS1W100

TP4704

TP4705

KRP-M01

△



A

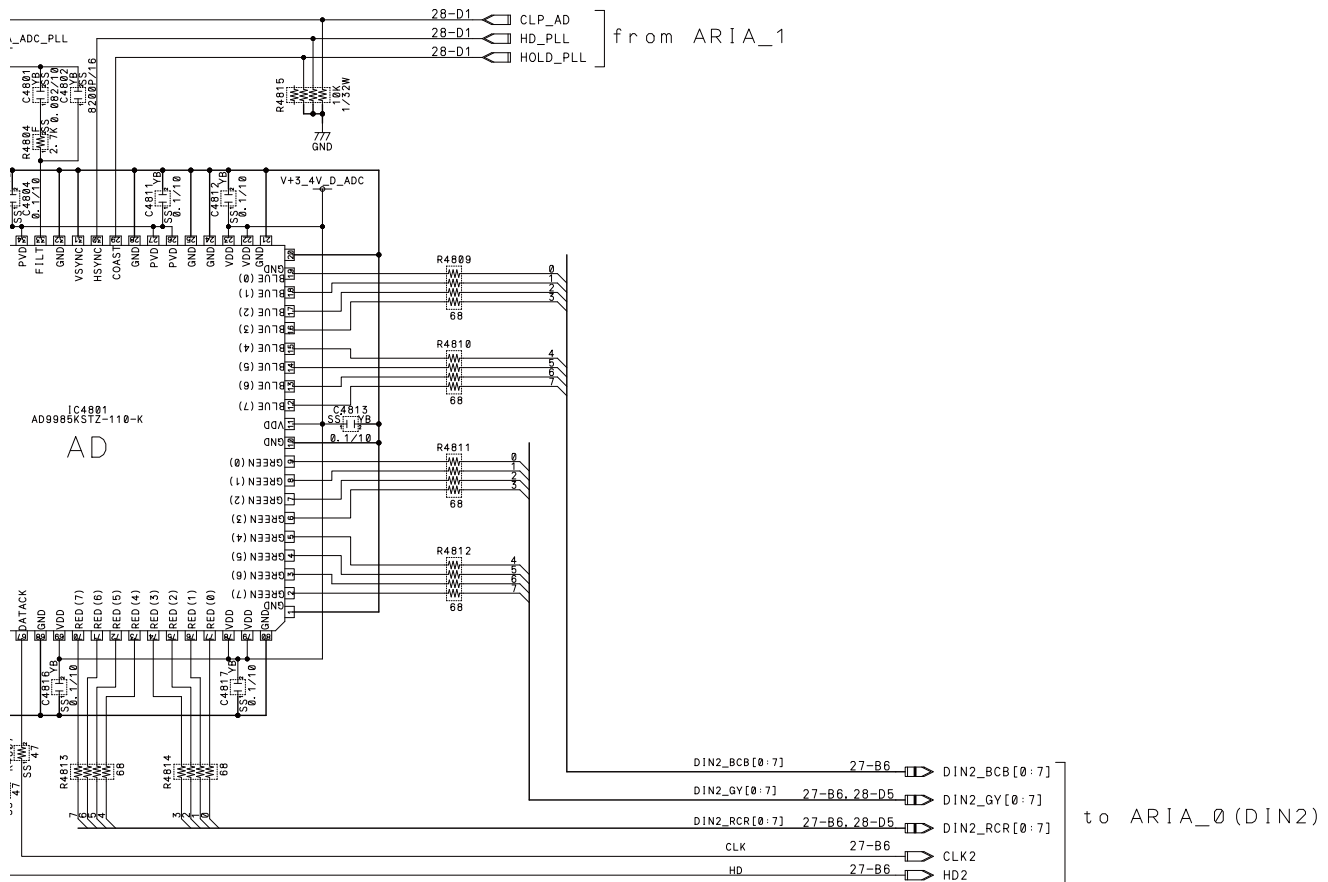
B

C

D

E

F



MODEL

ITEM	USED	VACANT
R	4803-4815	
C	4801-4820	
Q		
IC	4801	
F		
X		
L	4801, 4802	
D		
CN		

MAIN ASSY (MR_EU) (09/34)
ADC BLOCK

AWV2570- : AWW1413
AWV2569- : AWW1411
AWV2572- : AWW1411

4



A



Q

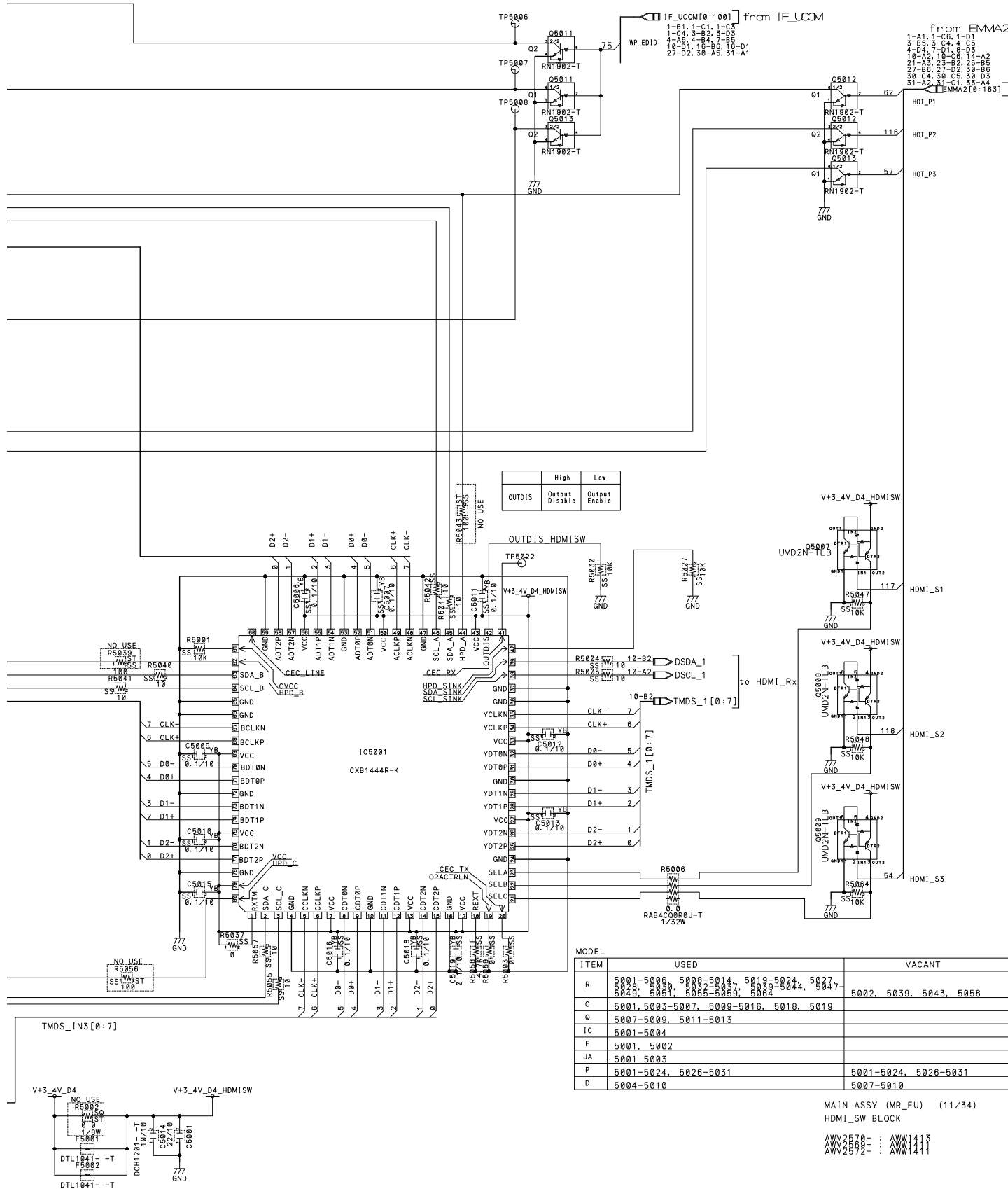
□

E

F

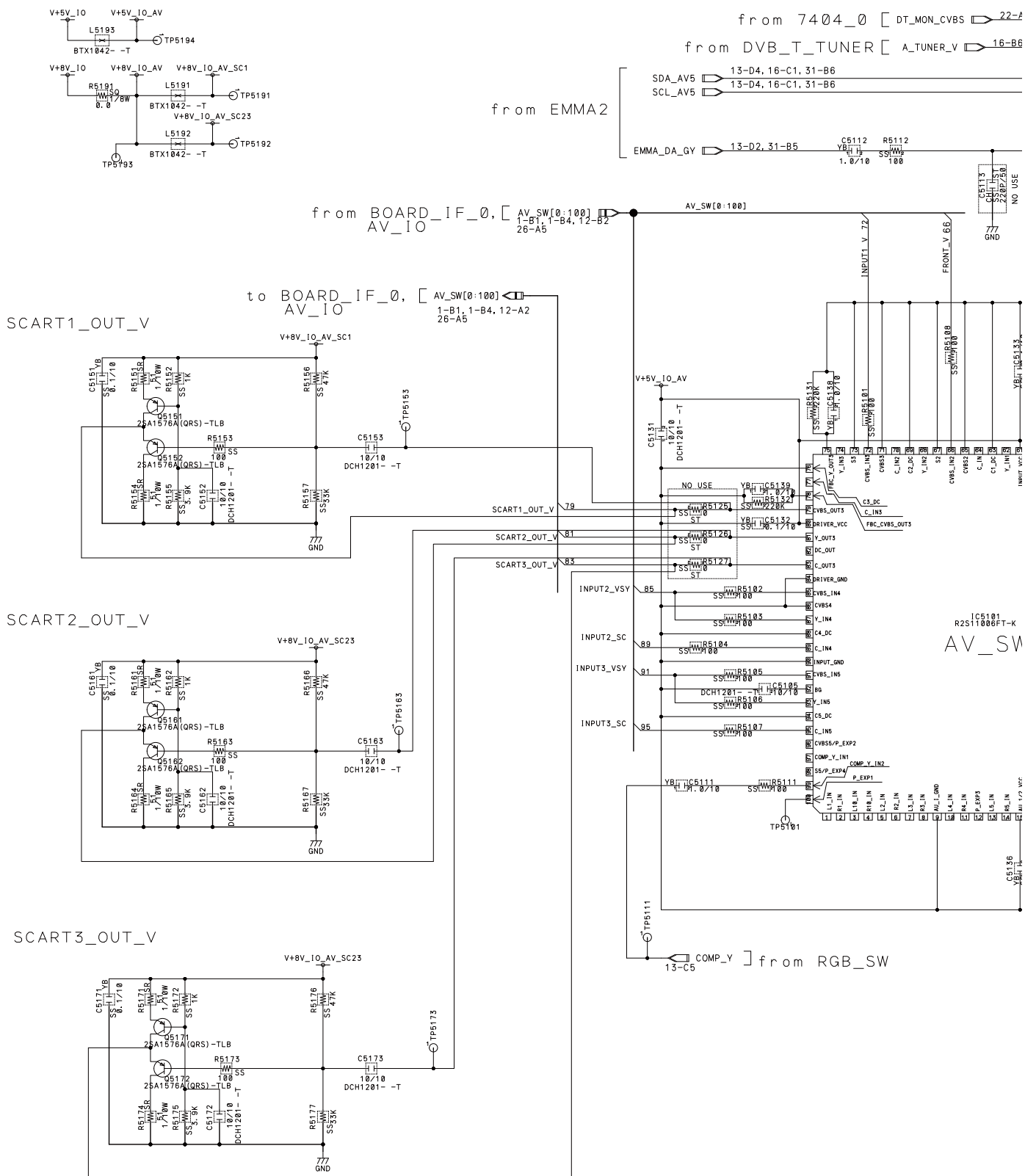
4

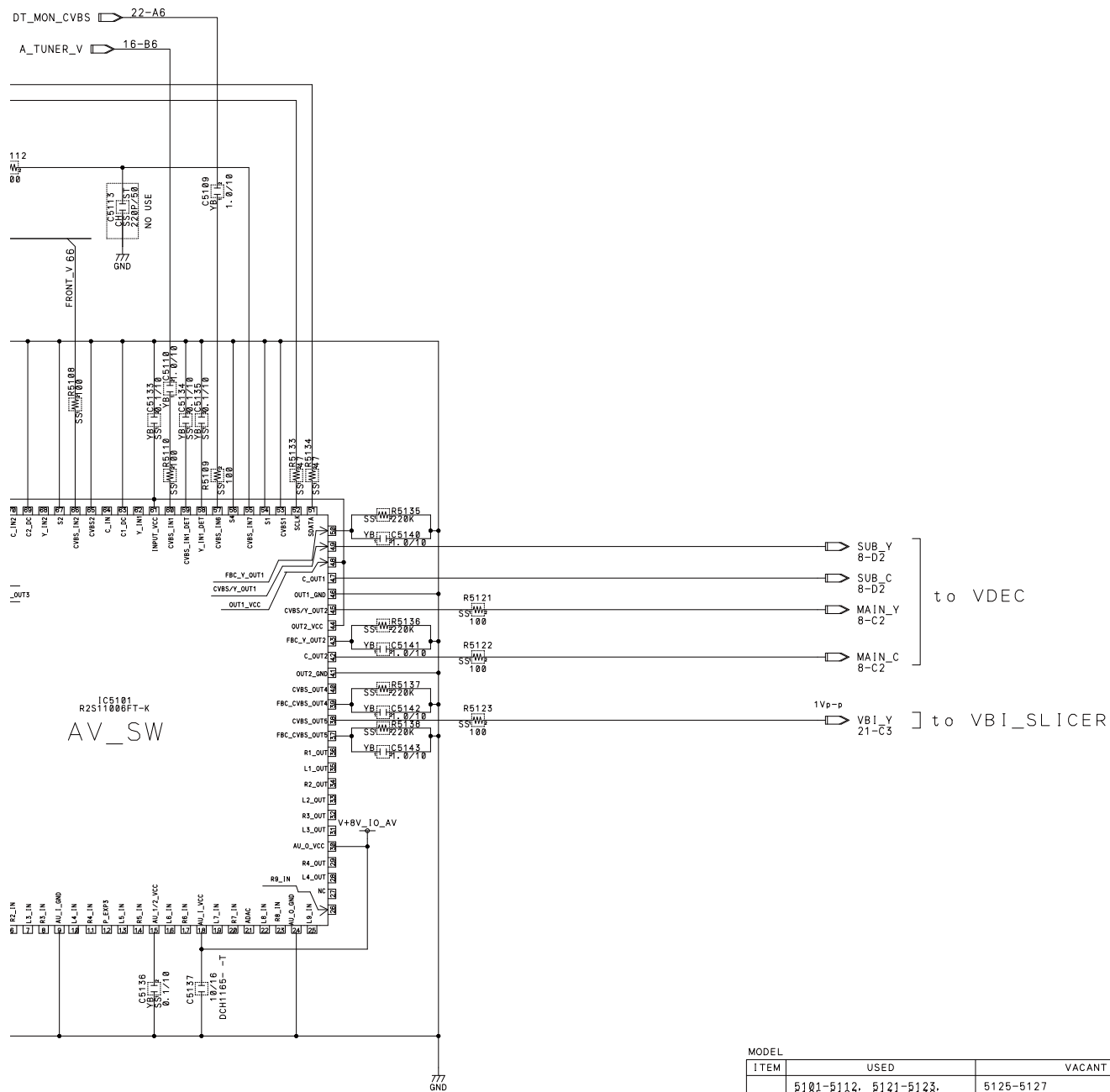




△

F





MODEL

ITEM	USED	VACANT
R	5101-5112, 5121-5123, 5129-5167, 5181-5189, 5171-5177	5125-5127
C	5105-5109, 5113-5131-5143, 5173	5113
Q	5151, 5152, 5161, 5162	
IC	5101	
F		
X		
L	5191-5193	
D		
CN		

MAIN ASSY (MR_EU) (12/34)
AV_SW BLOCK

AWV2570 : AWW1413 A12W1411
AWV2569 : AWW1411 A12W1411
AWV2572 : AWW1411 A12W1411

4

F

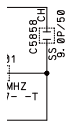


△



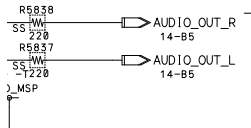
The Δ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

16-B6 Δ AIR_SIF] from DVB_T_TUNER

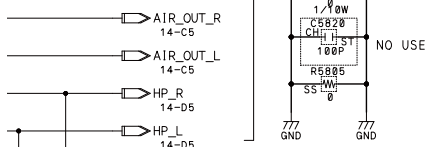
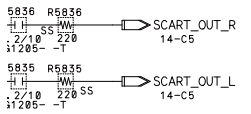


SW_P 14-A5
SW_N 14-A5

from OWN

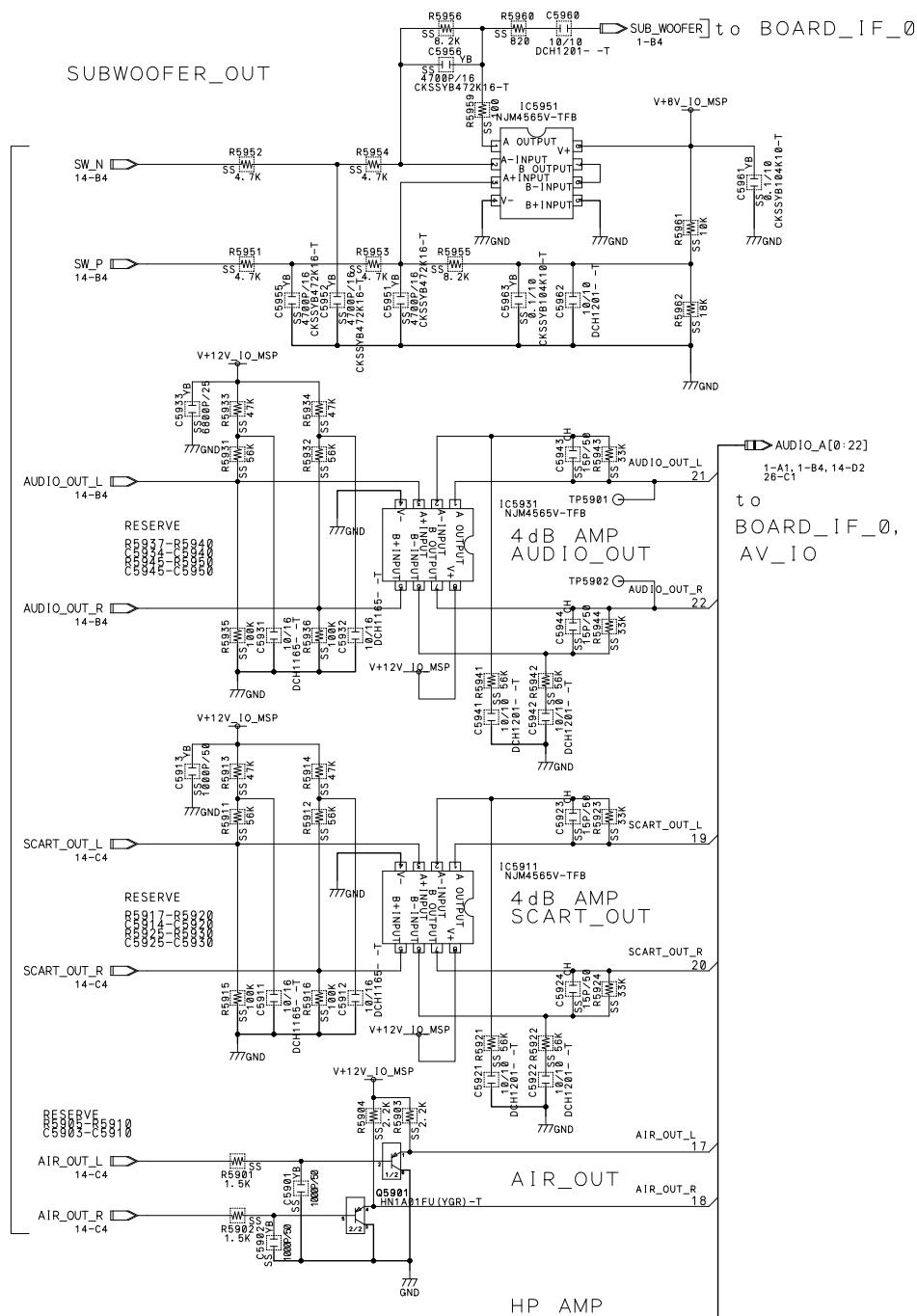


to OWN

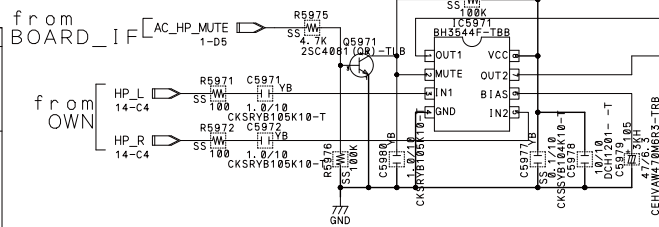


USED	VACANT
5805, 5806, 5807, 5808, 5809, 5810, 5811, 5812, 5813, 5814, 5815, 5816, 5817, 5818, 5819, 5820, 5821, 5822, 5823, 5824, 5825, 5826, 5827, 5828, 5829, 5830, 5831, 5832, 5833, 5834, 5835, 5836, 5837, 5838, 5839, 5840, 5841, 5842, 5843, 5844, 5845, 5846, 5847, 5848, 5849, 5850, 5851, 5852, 5853, 5854, 5855, 5856, 5857, 5858, 5859, 5860, 5861, 5862, 5863, 5864, 5865, 5866, 5867, 5868, 5869, 5870, 5871, 5872, 5873, 5874, 5875, 5876, 5877, 5878, 5879, 5880, 5881, 5882, 5883, 5884, 5885, 5886, 5887, 5888, 5889, 5890, 5891, 5892, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 5901, 5902, 5903, 5904, 5905, 5906, 5907, 5908, 5909, 5910, 5911, 5912, 5913, 5914, 5915, 5916, 5917, 5918, 5919, 5920, 5921, 5922, 5923, 5924, 5925, 5926, 5927, 5928, 5929, 5930, 5931, 5932, 5933, 5934, 5935, 5936, 5937, 5938, 5939, 5940, 5941, 5942, 5943, 5944, 5945, 5946, 5947, 5948, 5949, 5950, 5951, 5952, 5953, 5954, 5955, 5956, 5957, 5958, 5959, 5960, 5961, 5962, 5963, 5964, 5965, 5966, 5967, 5968, 5969, 5970, 5971, 5972, 5973, 5974, 5975, 5976, 5977, 5978, 5979, 5980, 5981, 5982, 5983, 5984, 5985, 5986, 5987, 5988, 5989, 5990, 5991, 5992, 5993, 5994, 5995, 5996, 5997, 5998, 5999, 6000	5874, 5875, 5876, 5877, 5878, 5879, 5880, 5881, 5882, 5883, 5884, 5885, 5886, 5887, 5888, 5889, 5890, 5891, 5892, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 5901, 5902, 5903, 5904, 5905, 5906, 5907, 5908, 5909, 5910, 5911, 5912, 5913, 5914, 5915, 5916, 5917, 5918, 5919, 5920, 5921, 5922, 5923, 5924, 5925, 5926, 5927, 5928, 5929, 5930, 5931, 5932, 5933, 5934, 5935, 5936, 5937, 5938, 5939, 5940, 5941, 5942, 5943, 5944, 5945, 5946, 5947, 5948, 5949, 5950, 5951, 5952, 5953, 5954, 5955, 5956, 5957, 5958, 5959, 5960, 5961, 5962, 5963, 5964, 5965, 5966, 5967, 5968, 5969, 5970, 5971, 5972, 5973, 5974, 5975, 5976, 5977, 5978, 5979, 5980, 5981, 5982, 5983, 5984, 5985, 5986, 5987, 5988, 5989, 5990, 5991, 5992, 5993, 5994, 5995, 5996, 5997, 5998, 5999, 6000
5820, 5824, 5825, 5826, 5827, 5828, 5829, 5830, 5831, 5832, 5833, 5834, 5835, 5836, 5837, 5838, 5839, 5840, 5841, 5842, 5843, 5844, 5845, 5846, 5847, 5848, 5849, 5850, 5851, 5852, 5853, 5854, 5855, 5856, 5857, 5858, 5859, 5860, 5861, 5862, 5863, 5864, 5865, 5866, 5867, 5868, 5869, 5870, 5871, 5872, 5873, 5874, 5875, 5876, 5877, 5878, 5879, 5880, 5881, 5882, 5883, 5884, 5885, 5886, 5887, 5888, 5889, 5890, 5891, 5892, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 5901, 5902, 5903, 5904, 5905, 5906, 5907, 5908, 5909, 5910, 5911, 5912, 5913, 5914, 5915, 5916, 5917, 5918, 5919, 5920, 5921, 5922, 5923, 5924, 5925, 5926, 5927, 5928, 5929, 5930, 5931, 5932, 5933, 5934, 5935, 5936, 5937, 5938, 5939, 5940, 5941, 5942, 5943, 5944, 5945, 5946, 5947, 5948, 5949, 5950, 5951, 5952, 5953, 5954, 5955, 5956, 5957, 5958, 5959, 5960, 5961, 5962, 5963, 5964, 5965, 5966, 5967, 5968, 5969, 5970, 5971, 5972, 5973, 5974, 5975, 5976, 5977, 5978, 5979, 5980, 5981, 5982, 5983, 5984, 5985, 5986, 5987, 5988, 5989, 5990, 5991, 5992, 5993, 5994, 5995, 5996, 5997, 5998, 5999, 6000	5805, 5806, 5816, 5820
866, 5901, 5971	5866
801, 5911, 5931, 5951, 5971	
801	
807, 5808, 5866	5866

SUBWOOFER_OUT



HP AMP



MAIN ASSY (MR_EU) (14/34)
MSP BLOCK

AWV2570 : AWW1413
AWV2565 : AWW1411
AWV2572 : AWW1411

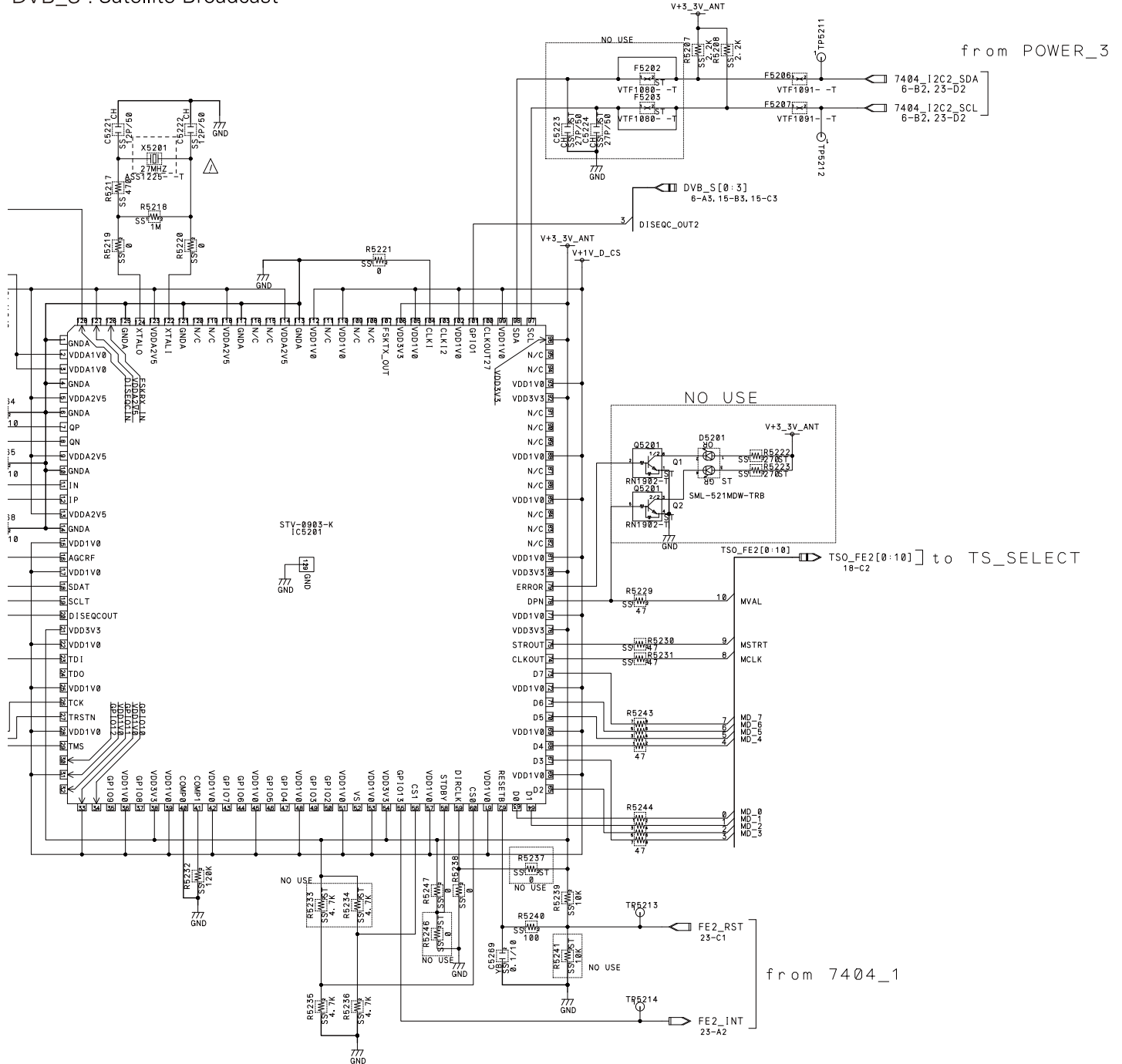
4



The Δ mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

DVB_S : Satellite Broadcast

ITEM	USED	VACANT
R	5201-5247	5202, 5203, 5204, 5222-5224, 5235, 5239, 5241, 5241b
c	5201-5271	5205-5211, 5223-5224, 5266, 5270, 5271
Q	5201	5201
IC	5201	
F	5201-5203, 5206, 5207	5202, 5203
X	5201	
L	5201, 5202	5201
D	5201-5203	5201
U	5201	



MAIN ASSY (MR_EU) (15/34)
DVB_S_TUNER_BLK
AWV2570 : AWW1413
AWV2569 : AWW1411
AWV2572 : AWW1411

△

A



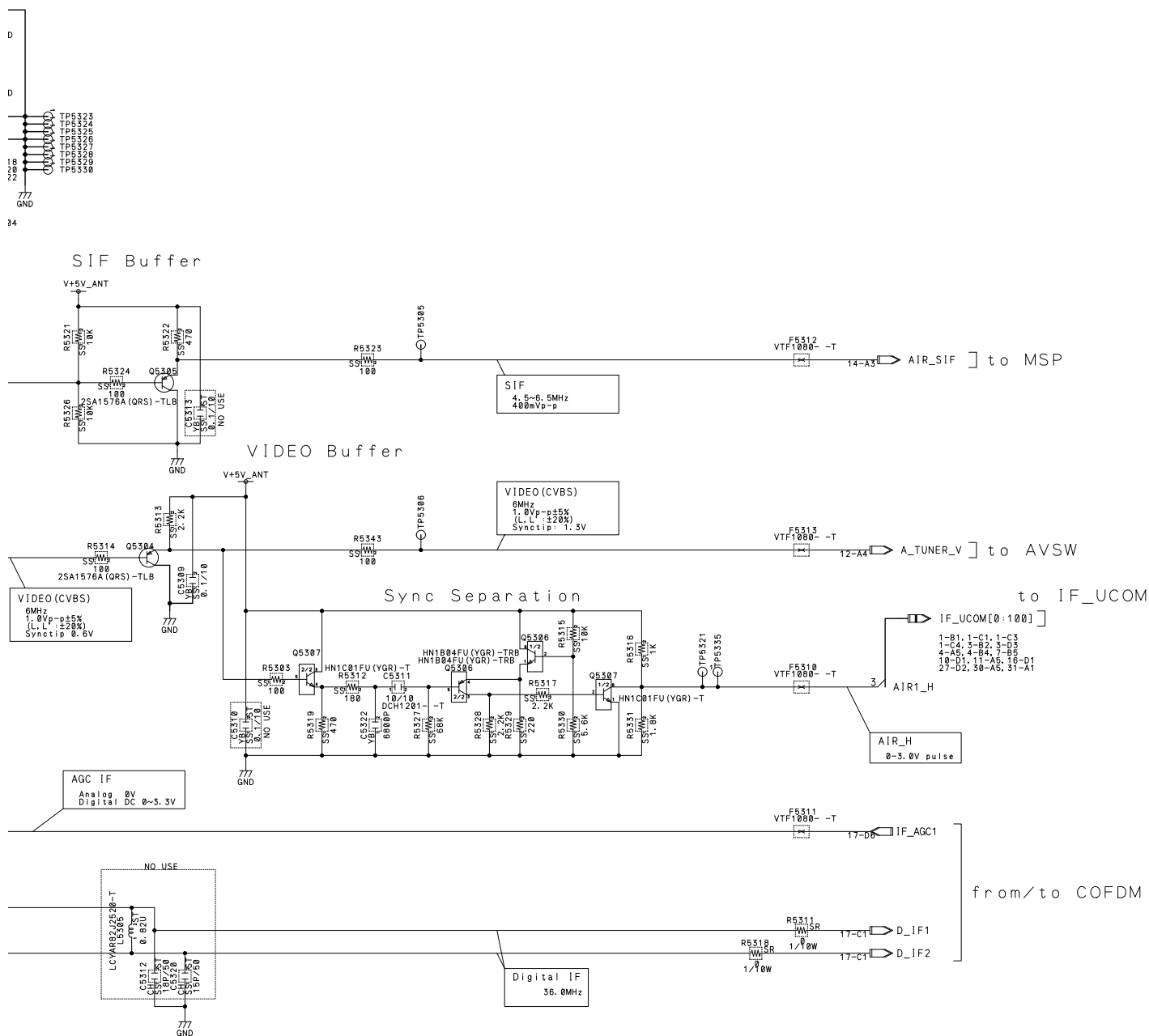
C

D

E

F

KRP-M01



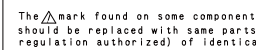
MODEL	USED	VACANT
R	5301-5319, 5321-5324, 5326-5331, 5343	
C	5301-5304, 5306, 5307, 5309-5322, 5324-5330	5301, 5302, 5304, 5306, 5310, 5321, 5325-5328
Q	5303-5308	
IC	5301	
F	5301-5313	
U	5301	
L	5301-5308	5302, 5305
D	5301	
CN		

MAIN ASSY (MR_EU) (16/34)
DVB_T_TUNER BLK

AWW2570 : AWW1413
AWW2569 : AWW1411
AWW2572 : AWW1411

4

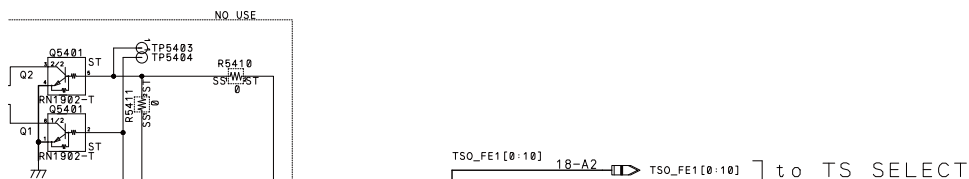
F



16-D1 → SCL_TU
16-D1 → SDA_TU } to DVB-T_TUNER

MODEL

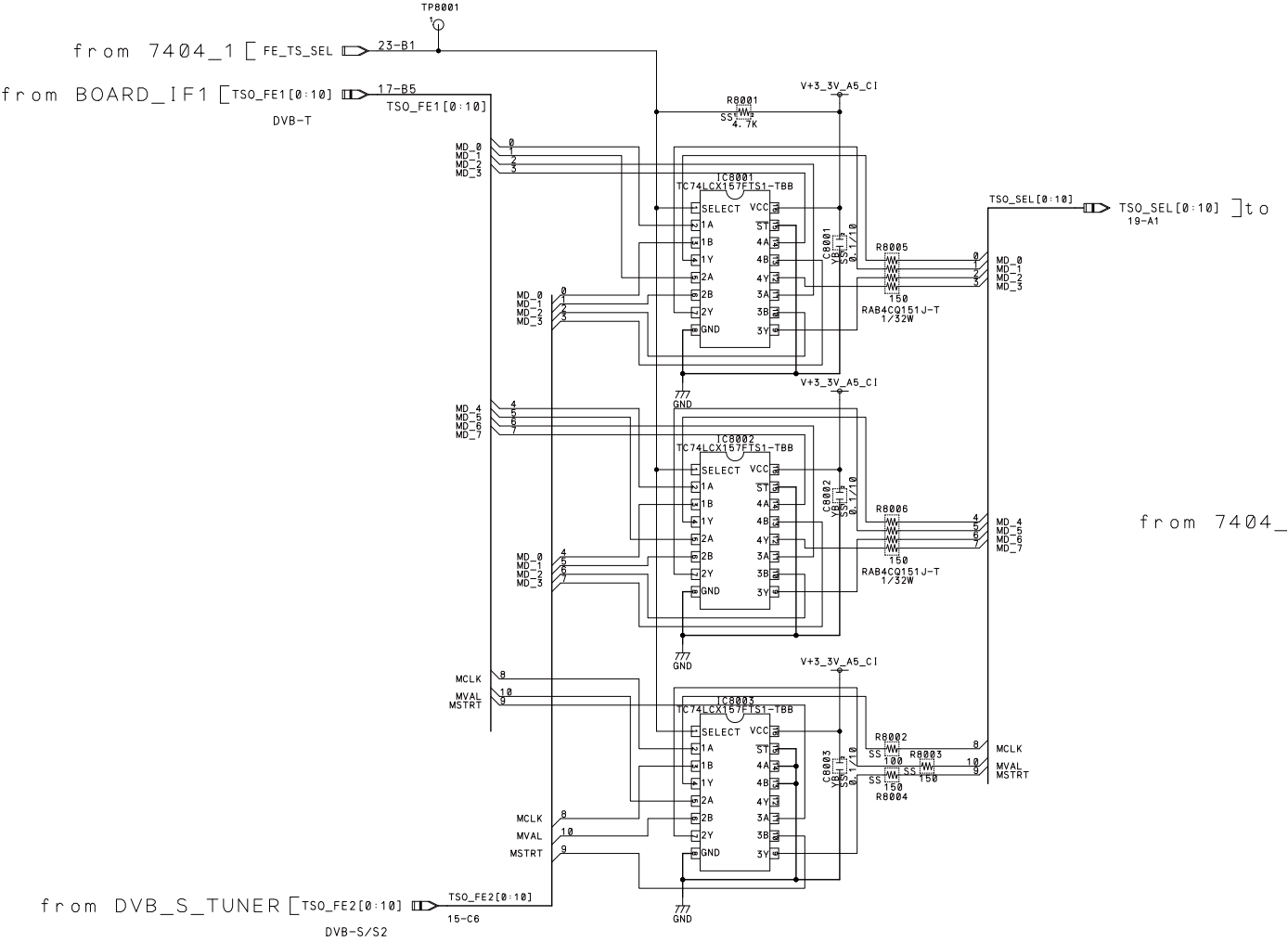
ITEM	USED	VACANT
R	5401, 5403, 5411, 5419, 5423, 5426, 5428, 5434, 5436, 5438	5406, 5408, 5413, 5416, 5417, 5420, 5422, 5425, 5426
C	5401-5430	5405, 5406, 5407, 5410, 5413, 5414
Q	5401, 5402	5401
IC	5401	
F	5402-5404	
X	5401	
L	5401-5404	
D	5401	5401
CN		



10.19 MAIN BLOCK ASSY (18/33) [TS_SELECT BLOCK]

FE_TS_SEL : Select DVB-T or DVB-S tuner

High	DVB-S/S2
Low	DVB-T



A

B

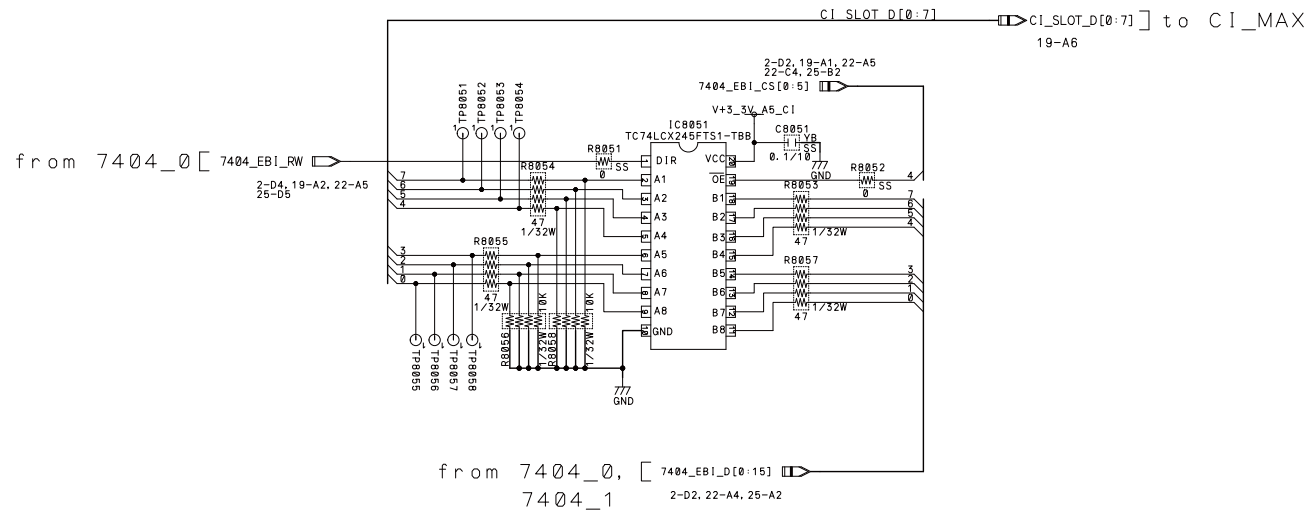
C

D

E

F

SO_SEL[0:10]]to CIMAX
19-A1



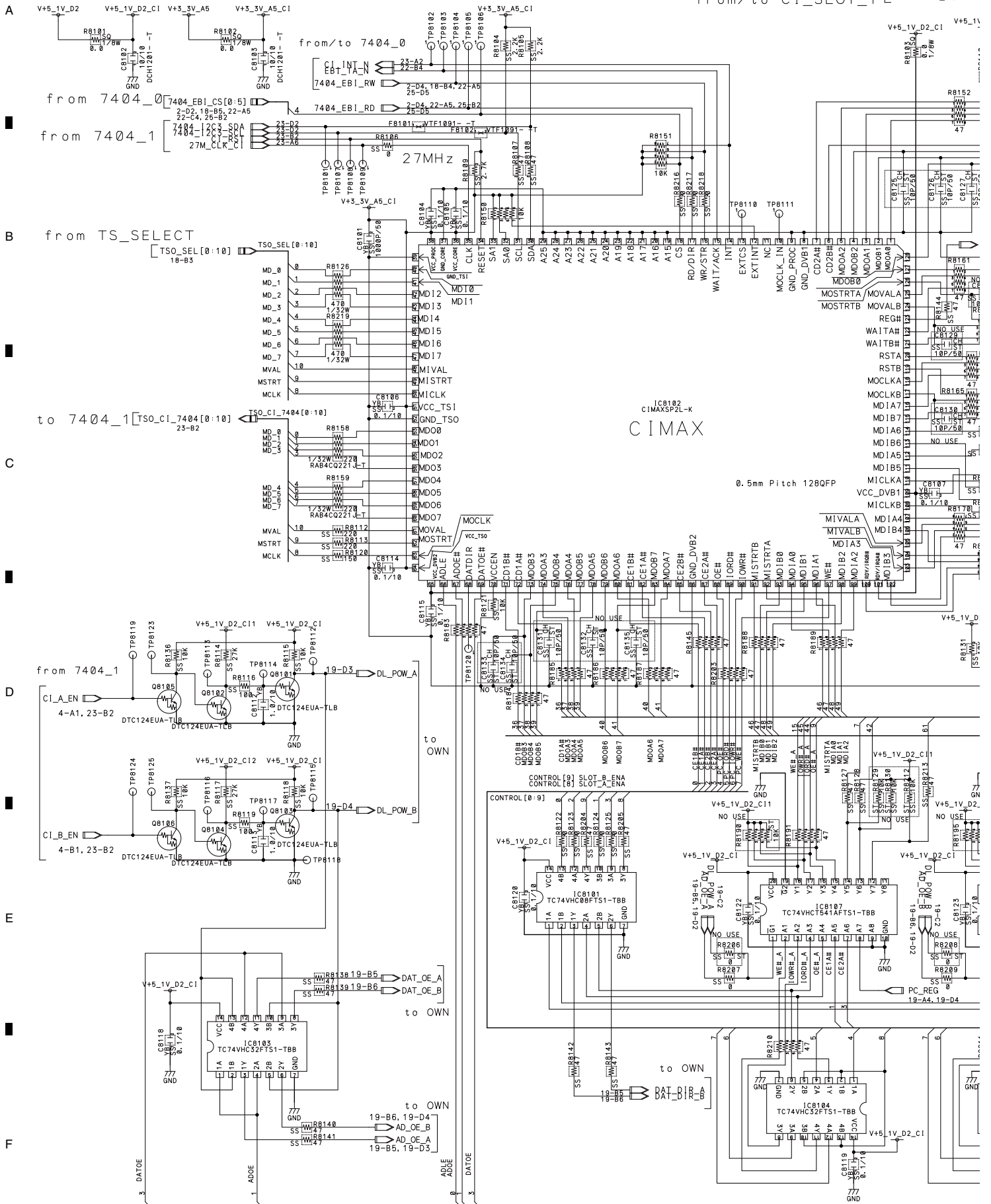
MODEL		
ITEM	USED	VACANT
R	8001-8006, 8051-8058	
C	8001-8003, 8051	
Q		
IC	8001-8003, 8051	
F		
X		
L		
D		
CN		

MAIN ASSY (MR_EU) (18/34)
TS_SELECT BLOCK

AWV2570- : AWW1413
AWV2568- : AWW1411
AWV2572- : AWW1411

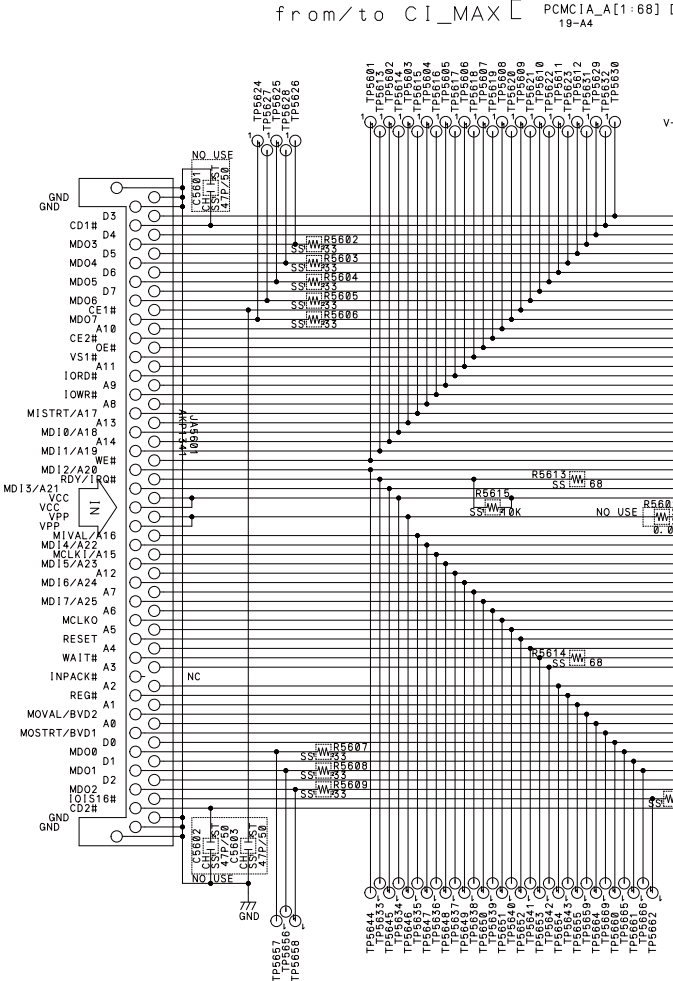
10.20 MAIN BLOCK ASSY (19/33) [CIMAX BLOCK]

from/to BOARD_IF1 PCMCIA_B[1:68]
from/to CI_SLOT_1 PCMCIA_A[1:68]



10.21 MAIN BLOCK ASSY (20/33) [CI_CARD_1 BLOCK]

COMMON INTERFACE1
(TERRESTRIAL)



A

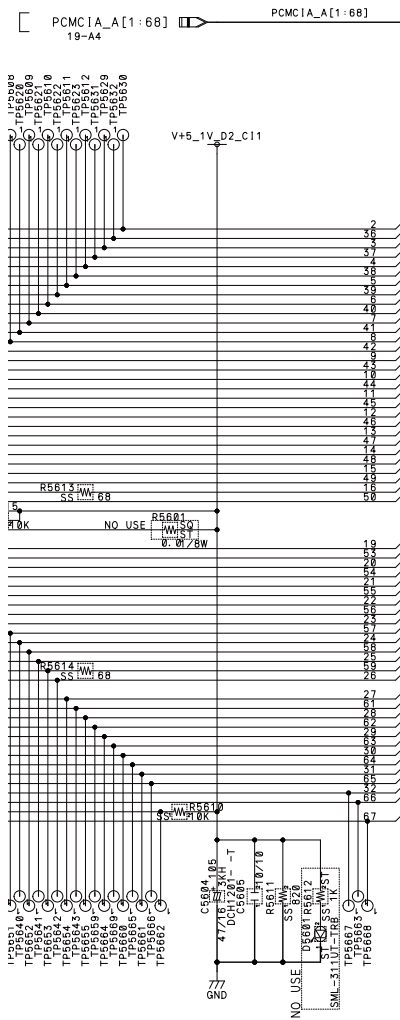
B

C

D

E

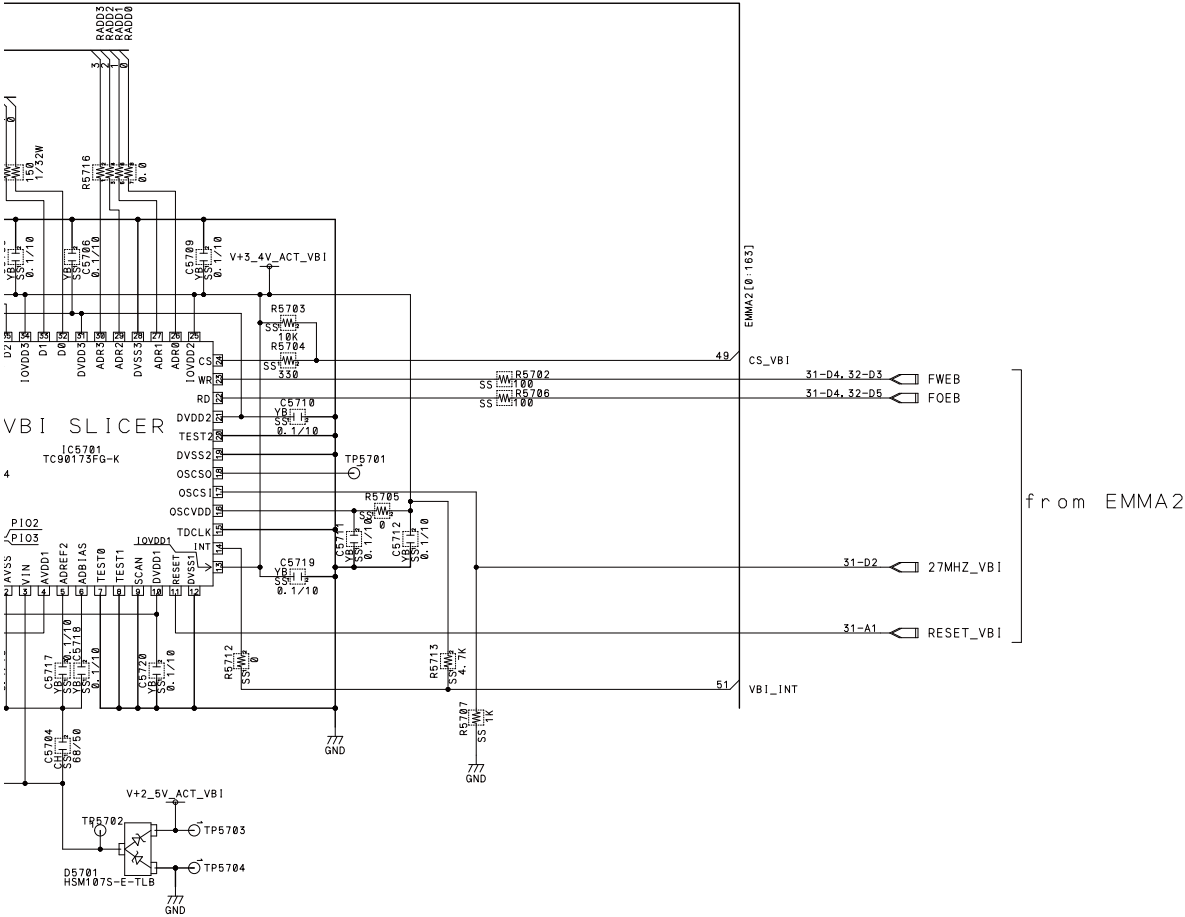
F



MODEL		
ITEM	USED	VACANT
R	5601-5615	5601, 5612
C	5601-5605	5601-5603
Q		
IC		
F		
JA	5601	
L		
D	5601	5601
CN		

MAIN ASSY (MR_EU) (20/34)
CI_CARD_1 BLOCK
AWV2570 : AWW1413
AWV2569 : AWW1411
AWV2572 : AWW1411

4



MODEL		
ITEM	USED	VACANT
R	5701-5707, 5709, 5712-5716	
C	5701, 5704-5712, 5714-5720	
Q		
IC	5701	
F		
JA		
L	5701, 5702	
D	5701	
CN		

MAIN ASSY (MR_EU) (21/34)
VBI_SLICER BLOCK
AWV2570- : AWW1413
AWV2569- : AWW1413
AWV2572- : AWW1411

△

4

EBI BUS

ANALOG VIDEO OUT

AUDIO OUT

for Debug

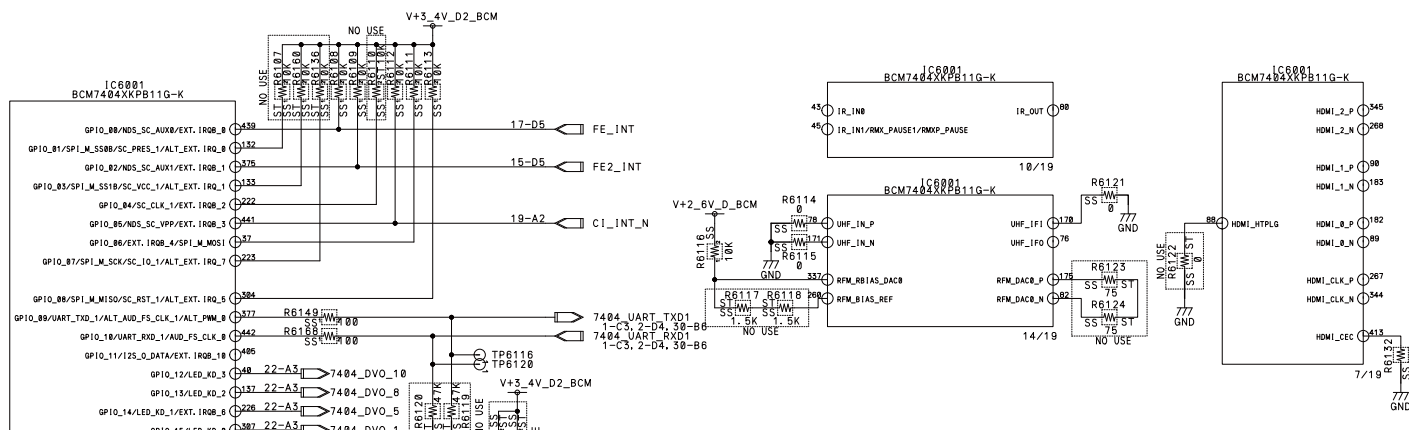
EJTAG
for DebugBBS
for Debug

from/to 7404_DDR

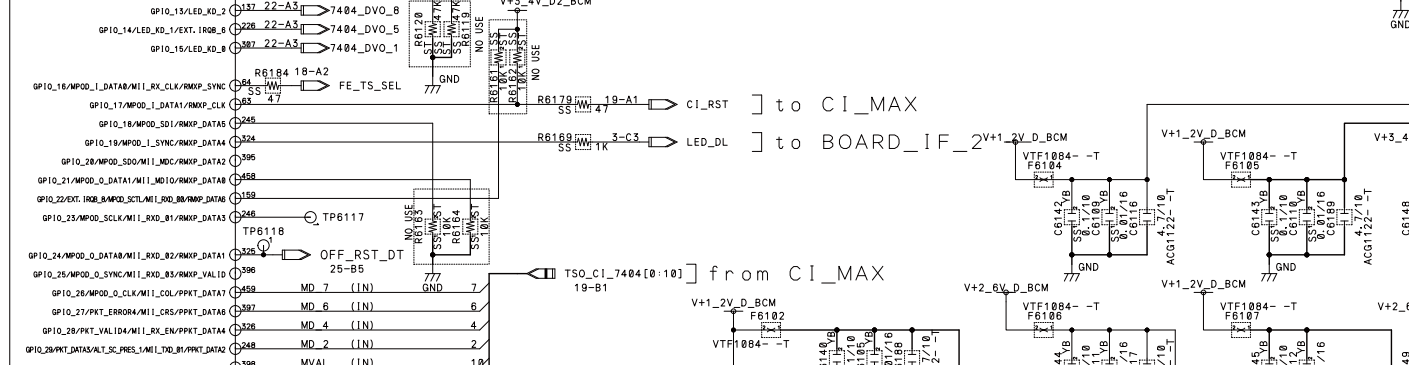
MAIN ASSY (MR_EU) (22/34)
7404_0 BLOCKAWW2570 : AWW1413
AWW2565 : AWW1411
AWW2572 : AWW1411

10.24 MAIN BLOCK ASSY (23/33) [7404_1 BLOCK]

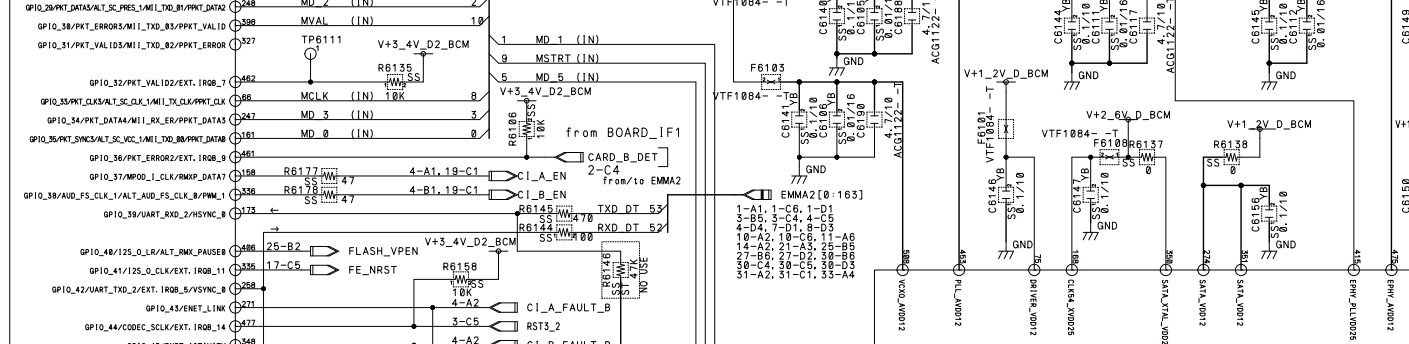
A



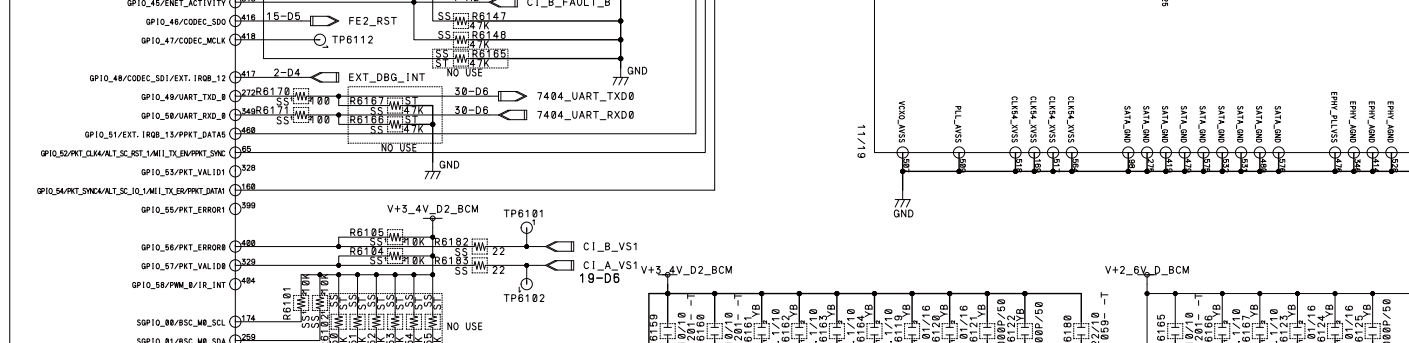
B



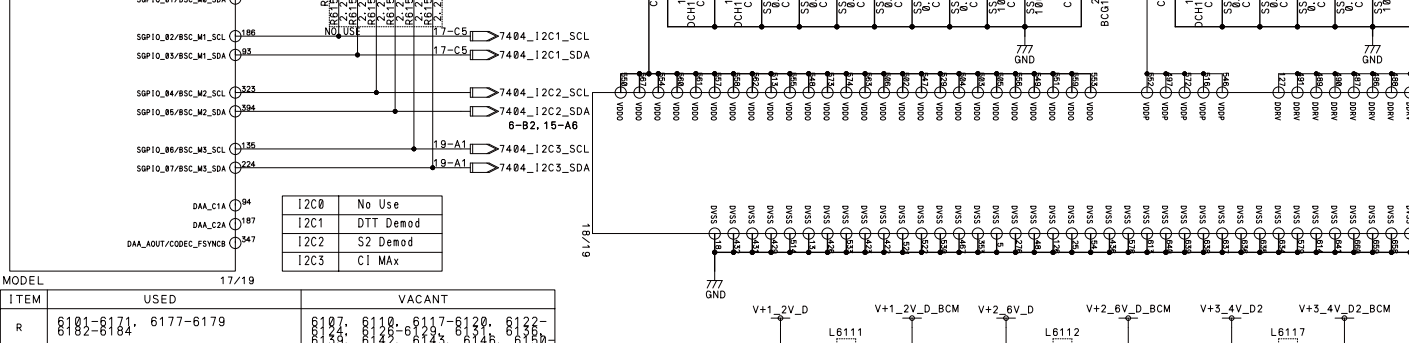
C



D



E



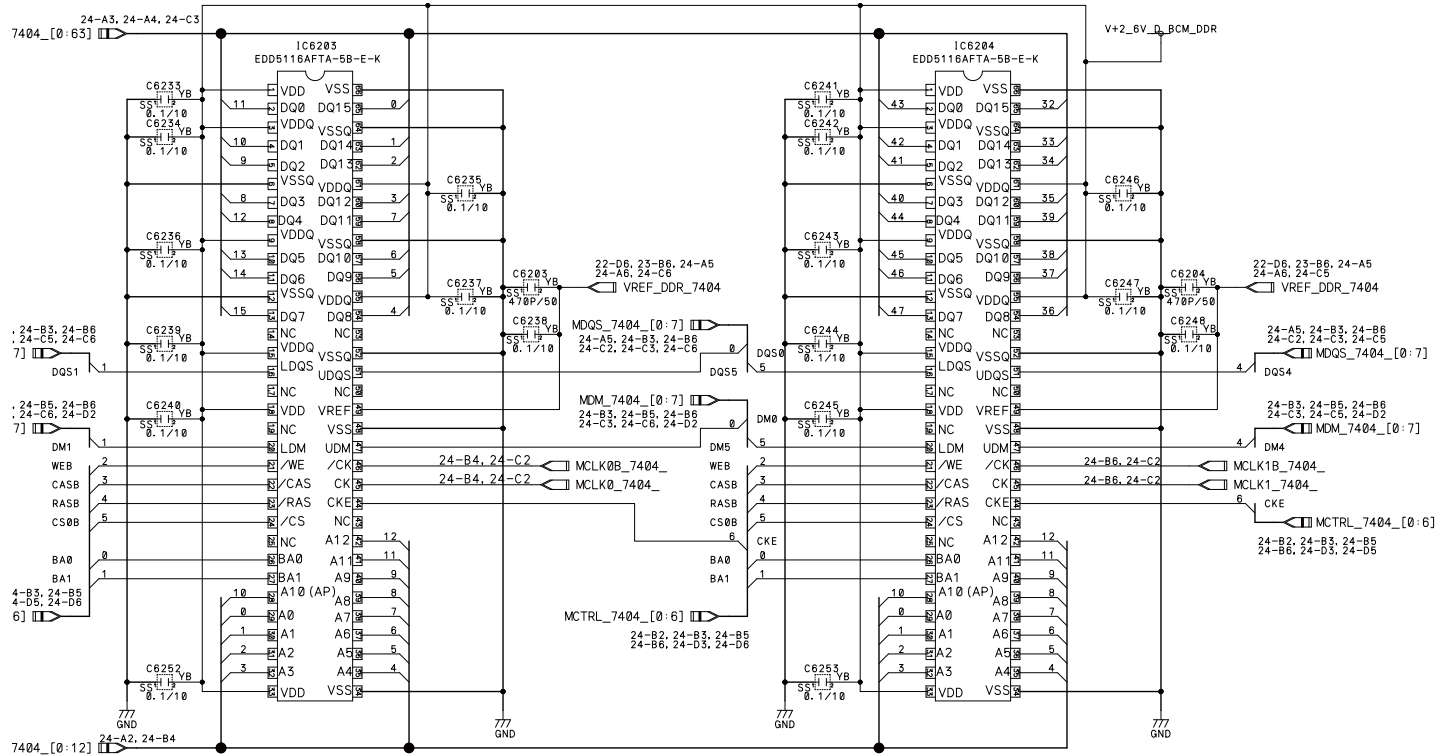
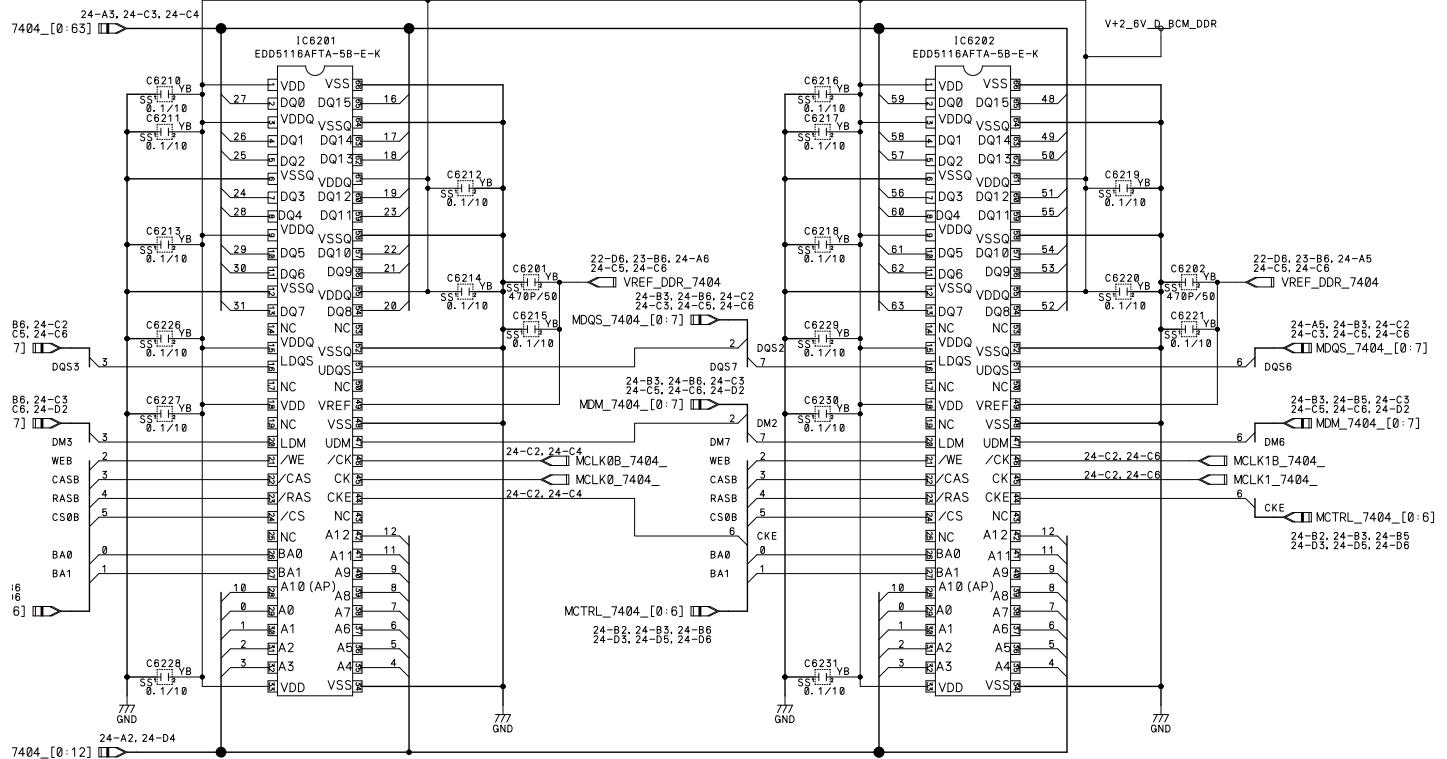
F



24 DDR
1bit x 4pcs

IC6201-6204

MAIN EDD5116AFTA-5B-E-K
SUB K4H511638D-UCCC-K



USED	VACANT
3316	
3253	6206
6202	
6204	

MAIN ASSY (MR_EU) (24/34)
7404_DDR BLOCK

AWV2570 : AWW1413
AWV2569 : AWW1411
AWV2572 : AWW1411

△

A



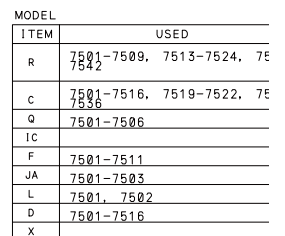
D

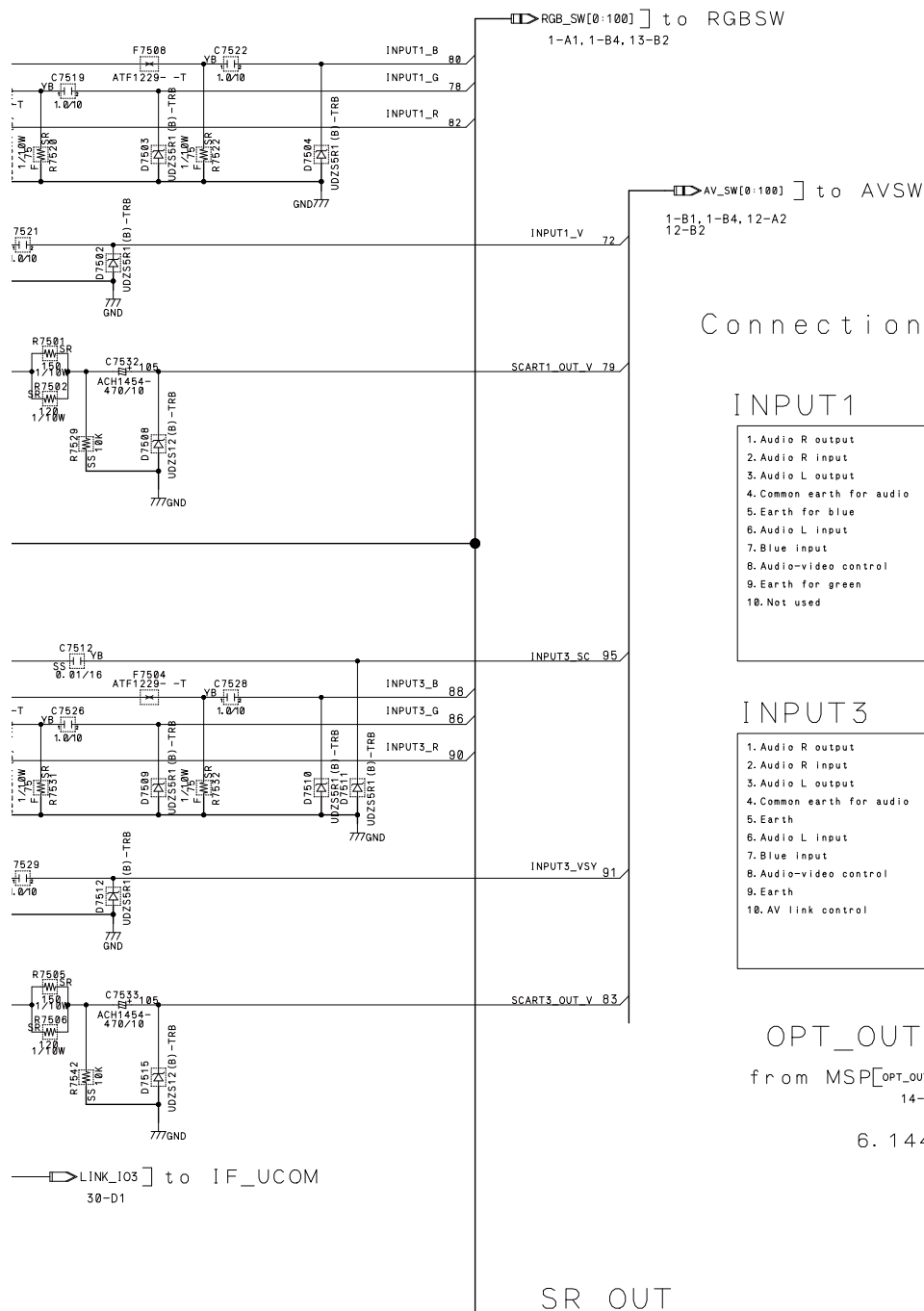


4

4

F





Connection pin assignments
for Scart

INPUT1

- | | |
|---------------------------|--------------------------------------|
| 1. Audio R output | 11. Green input |
| 2. Audio R input | 12. Not used |
| 3. Audio L output | 13. Earth for red |
| 4. Common earth for audio | 14. Not used |
| 5. Earth for blue | 15. Red input |
| 6. Audio L input | 16. Red/Green/Blue control |
| 7. Blue input | 17. Earth for video |
| 8. Audio-video control | 18. Earth for Red/Green/Blue control |
| 9. Earth for green | 19. Video output |
| 10. Not used | 20. Video input |
| | 21. Plug shield |

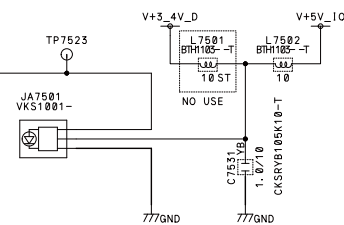
INPUT3

- | | |
|---------------------------|------------------------------------|
| 1. Audio R output | 11. Green input |
| 2. Audio R input | 12. Not used |
| 3. Audio L output | 13. Earth |
| 4. Common earth for audio | 14. Not used |
| 5. Earth | 15. Red input/Chroma S-Video input |
| 6. Audio L input | 16. Red/Green/Blue control |
| 7. Blue input | 17. Earth for video |
| 8. Audio-video control | 18. Earth |
| 9. Earth | 19. Video output |
| 10. AV link control | 20. Video input/S-Video input |
| | 21. Plug shield |

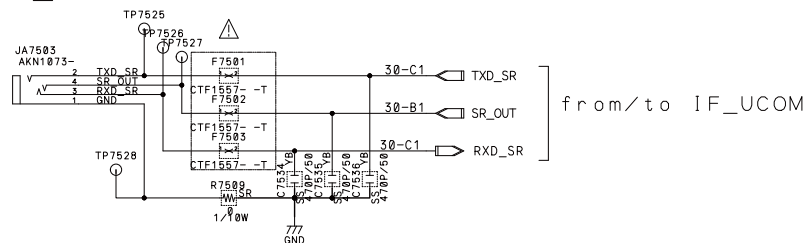
OPT_OUT

from MSP[OPT_OUT] 14-C1

6. 144MHz



SR_OUT



USED	VACANT
1-7509, 7513-7524, 7529-	
2	
1-7516, 7519-7522, 7525-	
6	
1-7506	
1-7511	
1-7503	
1-7502	7501
1-7516	7514

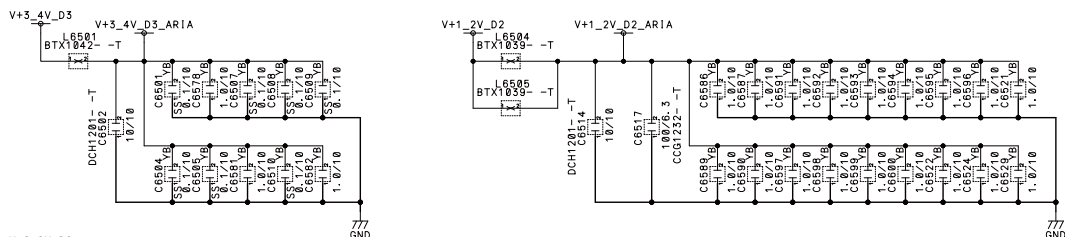
MAIN ASSY (MR_EU) (26/34)
AV_10 BLOCK

AWW2570- : AWW1413
AWW2568- : AWW1411
AWW2572- : AWW1411

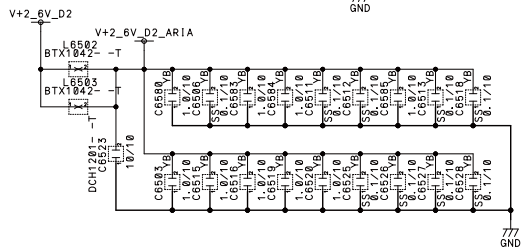
10.28 MAIN BLOCK ASSY (27/33) [ARIA_0 BLOCK]

ITEM	USED
R	6501-6508, 6510-6512, 6515
C	6501-6533, 6575-6578, 6587, 6589-6600
Q	
IC	6501
F	
JA	
L	6501-6509
X	6501

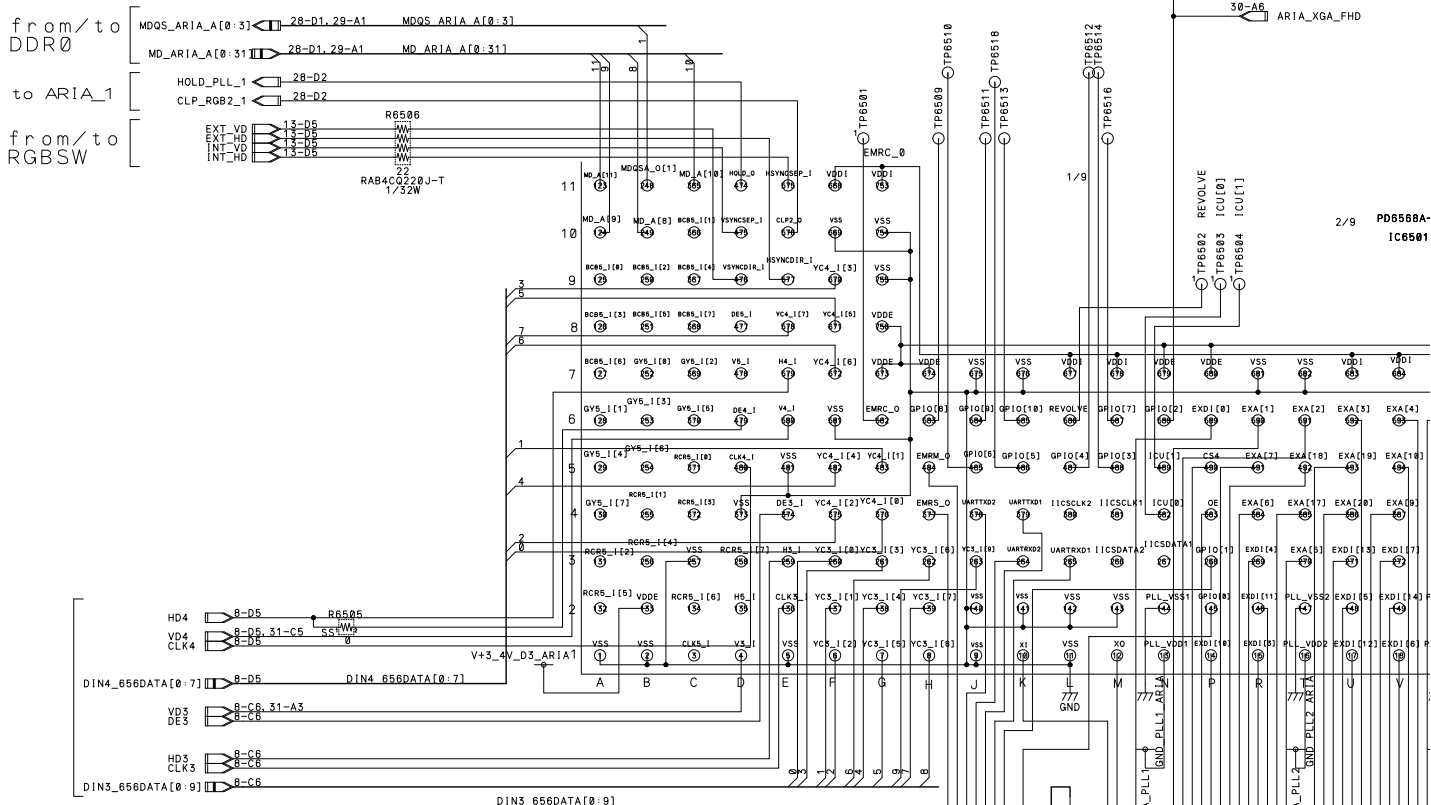
A



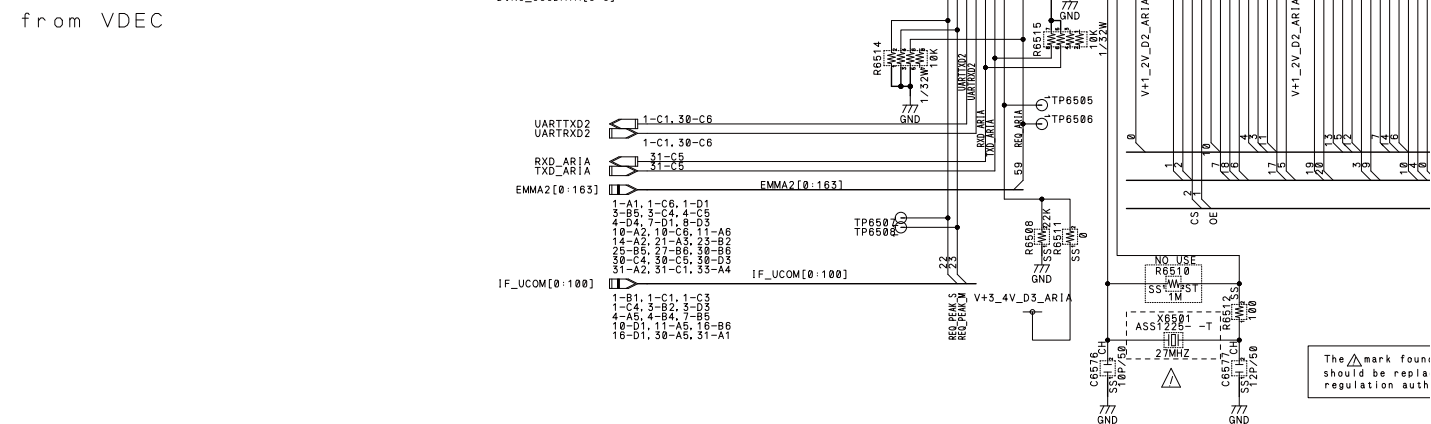
B



C



D



F

The mark found should be replacement regulation auth

A

F

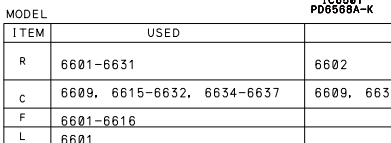
```

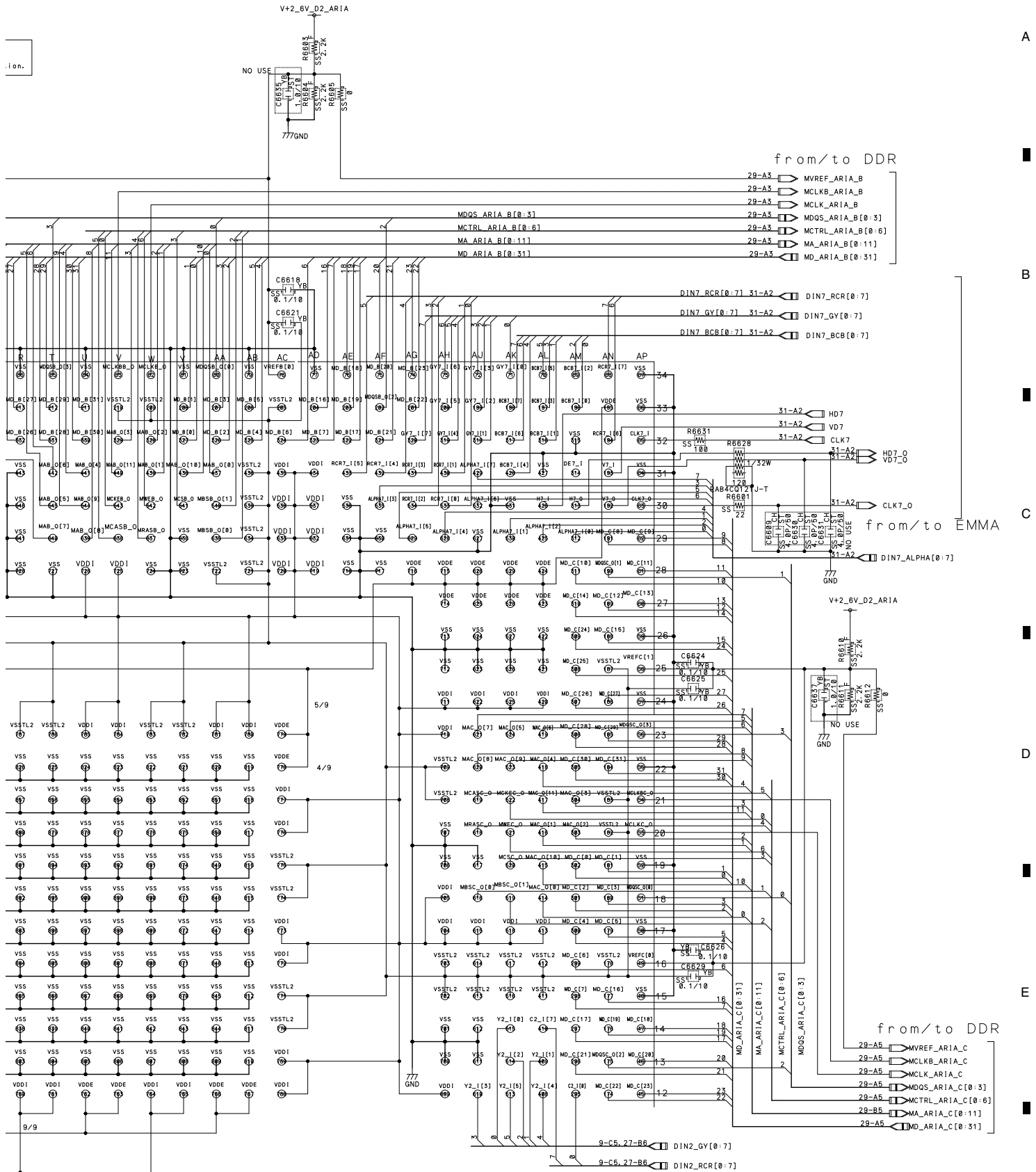
MAIN ASSY (MR_EU) (27/34)
ARIA_0 BLOCK
AWV2570- : AWW1413
AWV2569- : AWW1411
AWV2572- : AWW1411

```

4

F





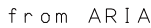
IC6501
PD9598A-K

	VACANT
6602	
6609, 6630, 6631, 6635-6637	
6634-6637	

4

DDR _____

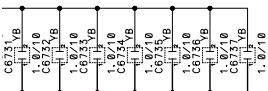
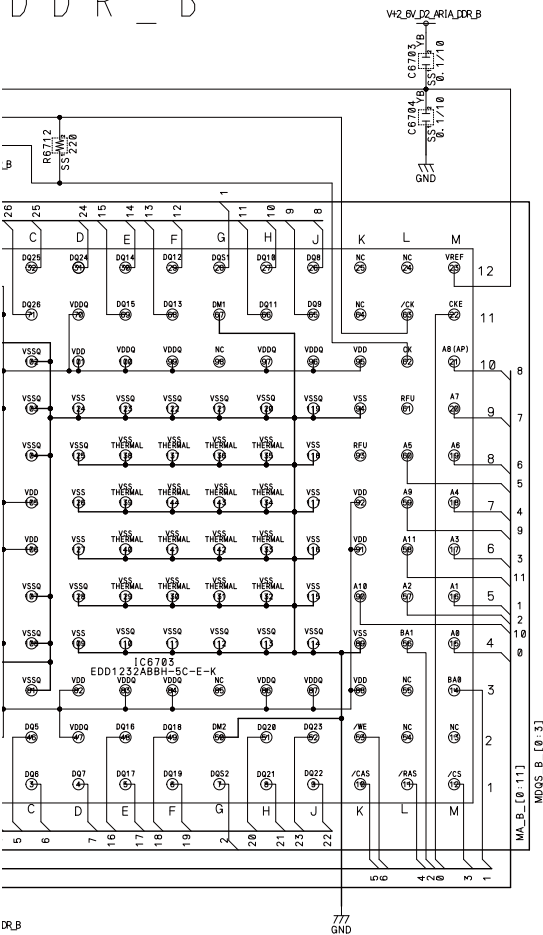
from/to ARIA



ARIA FLASH

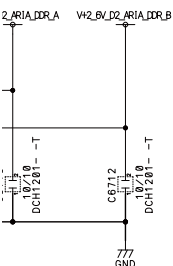
RIA DDR

DDR_B



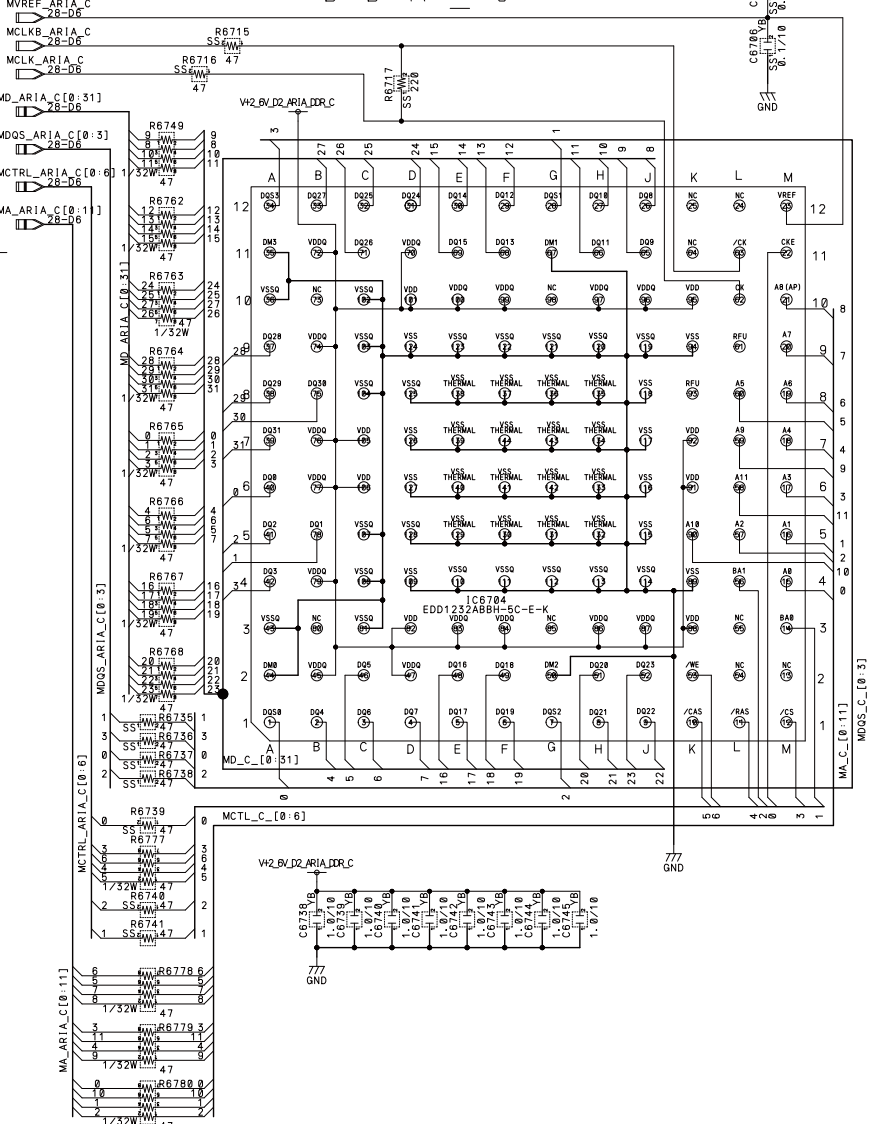
C6702, 6703, 6704 SUB PARTS

- 1st EDD1232ABBH-5C-E-K
- 2nd K4D263238K-VC50-K



from/to ARIA

DDR_C



MODEL	USED	VACANT
R	6705-6707, 6710-6712, 6715-6717, 6720-6741, 6743-6780	6744
C	6701-6708, 6718, 6722-6743, 6712, 6714,	
IC	6701-6704	
L	6701-6703	

MAIN ASSY (MR_EU) (29/34)
ARIA_DDR BLOCK

AWW2570 - : AWW1413
AWW2593 - : AWW1411
AWW2592 - : AWW1411

4

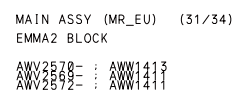
E



△



KRP-M01



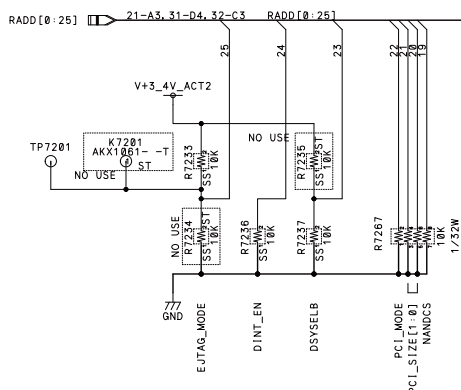
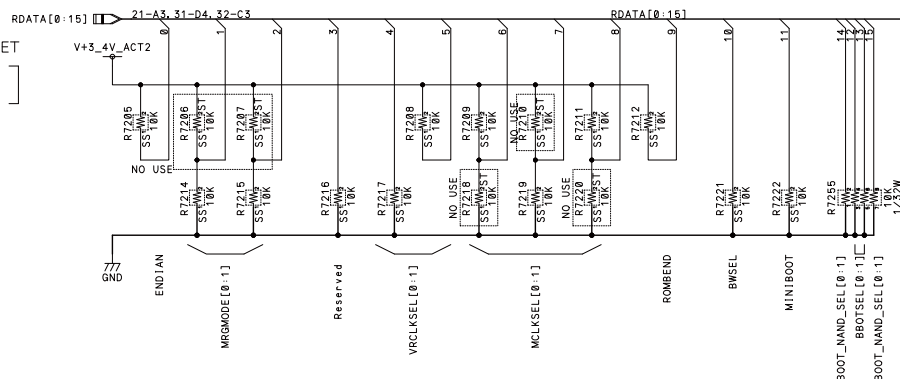
4

MAIN EDD5116AFTA-5B-E
SUB K4H511638D-UCCC-

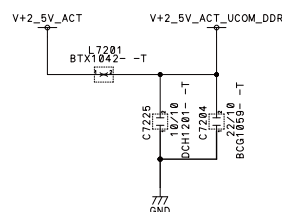
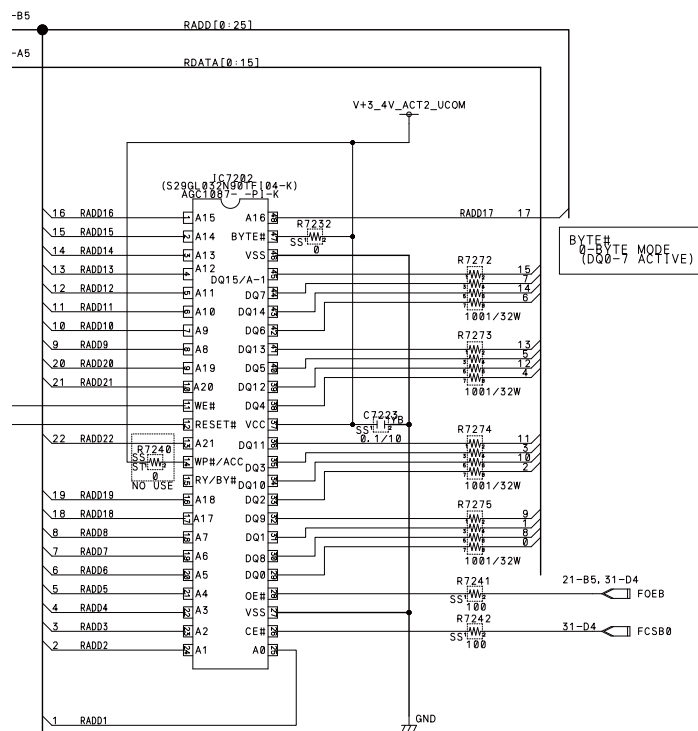
F



16AFTA-5B-E-K
1638D-UCCC-K



EMMA2 FLASH 32Mb i t



MODEL		
ITEM	USED	VACANT
R	7201-7238, 7240-7262, 7267-	7201, 7208, 7209, 7205, 7210
C	7201-7221, 7223, 7225, 7226	
Q		
IC	7201-7203	
F		
K	7201	7201
L	7201	
D		
X		

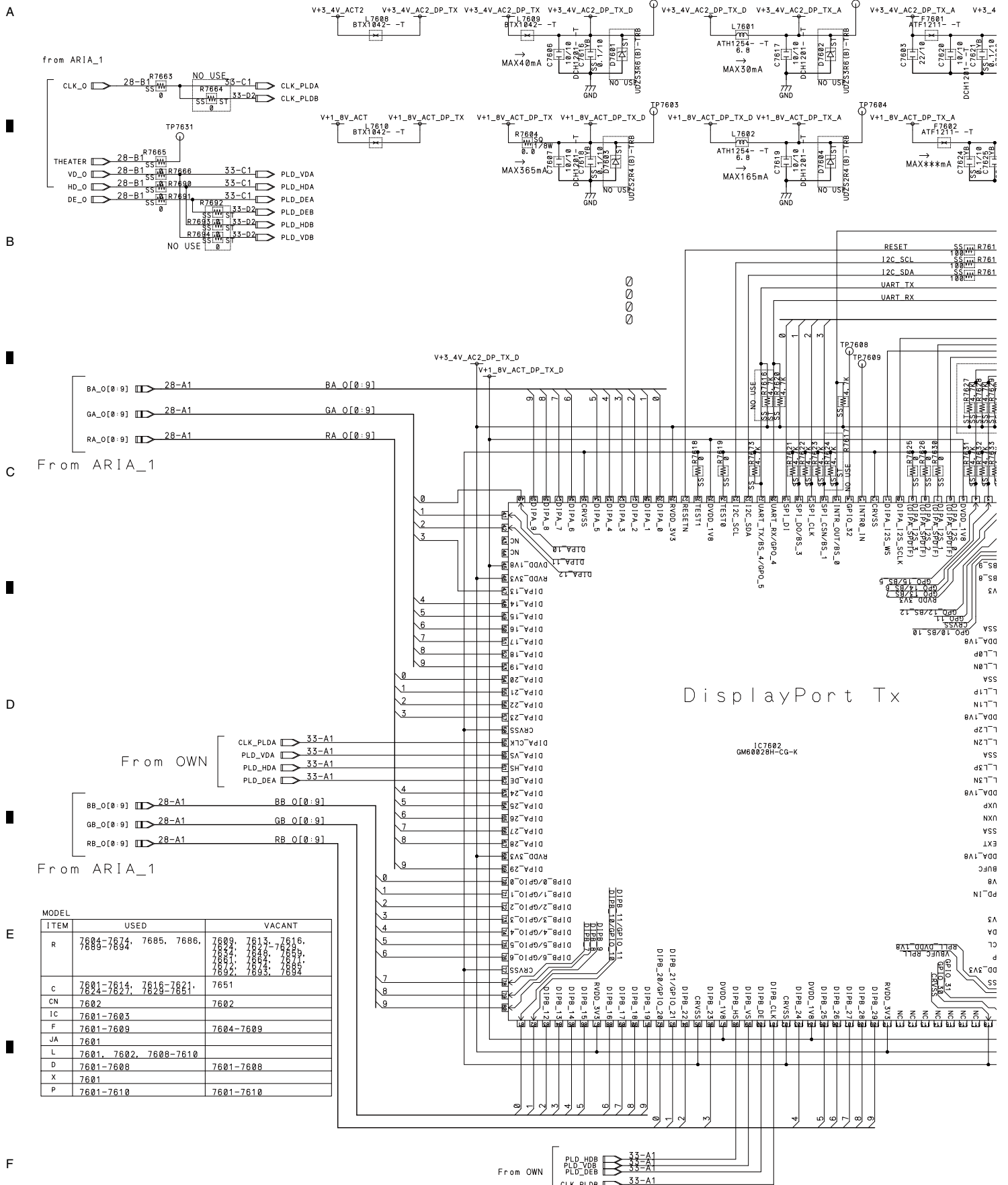
```

MAIN ASSY (MR_EU) (32/34)
EMMA2_MEM BLOCK

AWV2570- : AWW1413
AWV2569- : AWW1411
AWV2572- : AWW1411

```

10.34 MAIN BLOCK ASSY (33/33) [DP_TX BLOCK]





10.35 FRONT_HDM_USB ASSY

INPUT5

from/to MAIN Ass'y

USB CCONNECTOR

H1

The Δ mark found on some component should be replaced with same parts regulation authorized) of identical

A

B

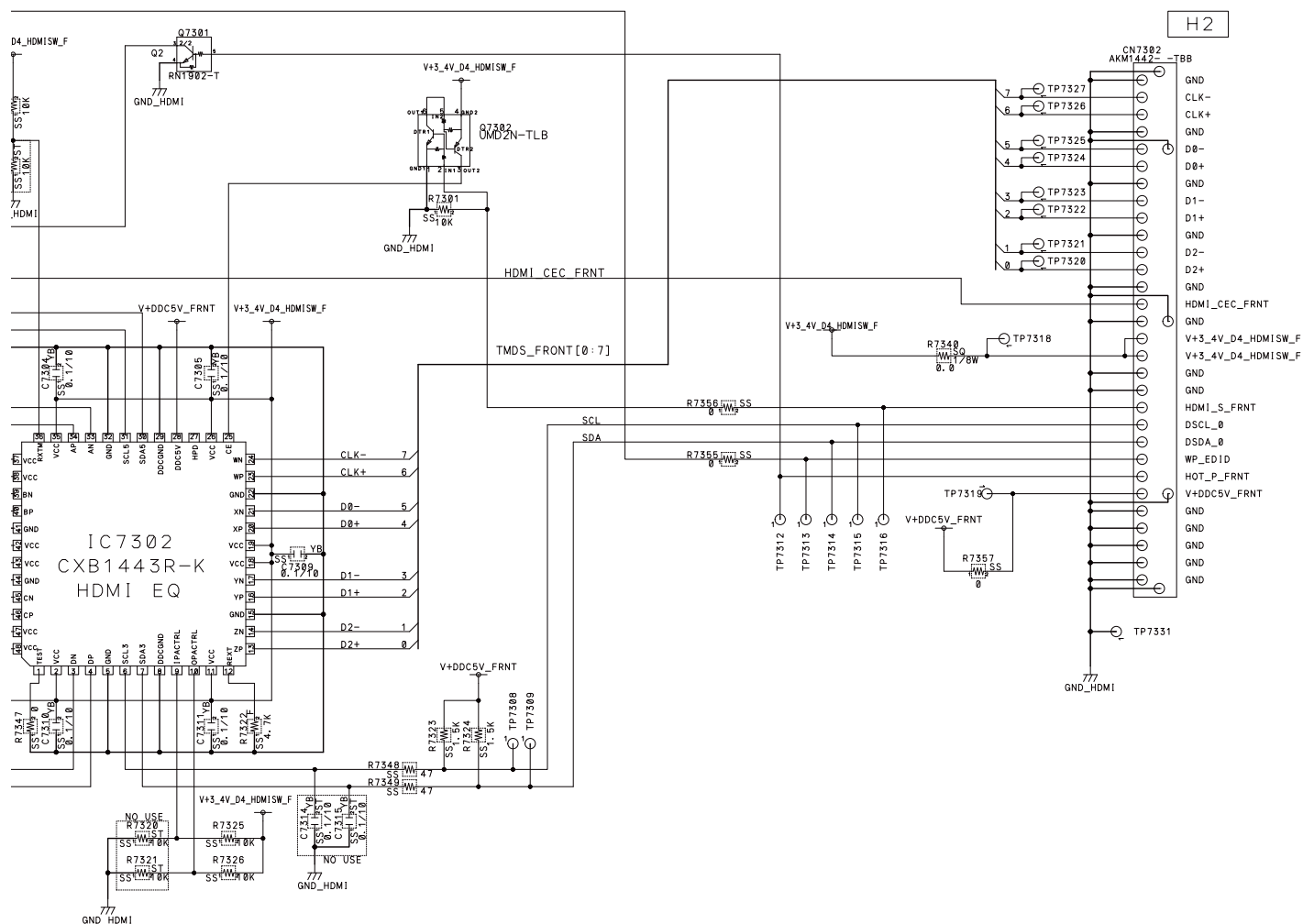
C

D

F

F

from/to	MAIN	Ass'y
---------	------	-------



MODEL		
ITEM	USED	VACANT
R	7301-7303, 7311-7314, 7320-7329, 7330, 7341-7349, 7350-7359	7314, 7320, 7321
C	7301, 7303-7311, 7314, 7315	7314, 7315
Q	7301, 7302	
IC	7301, 7302	
JA	7301, 7303	
CN	7302, 7304	
L	7301-7303	7303
D	7301	
P	7301-7312	7301-7312

x found on some component parts
replaced with same parts(safety
n authorized) of identical designation.

MAIN ASSY (MR_EU) (34/34)
FRONT_HDMI_USB ASS'Y

FRONT HDMI USB ASS'Y

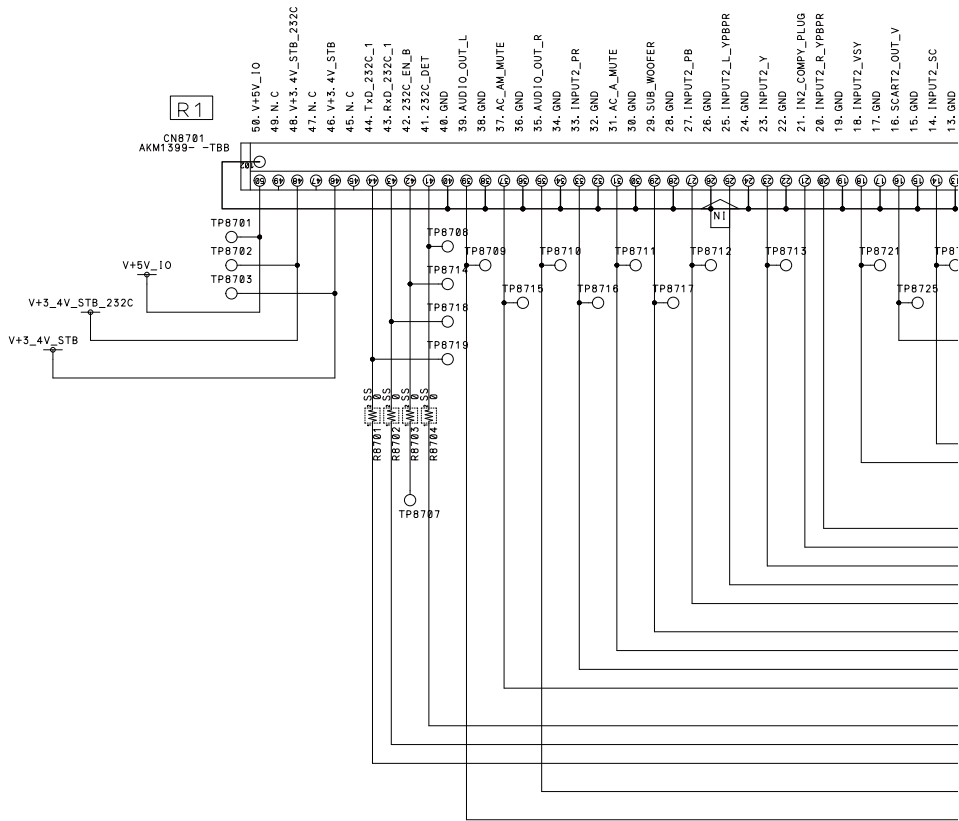
AWV2570- : AWW1412
AWV2569- : AWW1412
AWV2572- : AWW1412

AWV	2	5	7	8	-	:	AWW	4	1	2
AWV	2	5	6	9	-	:	AWW	1	4	2
AWV	2	5	7	2	-	:	AWW	1	4	2

AWV	2	5	7	8	-	:	AWW	4	1	2
AWV	2	5	6	9	-	:	AWW	1	4	2
AWV	2	5	7	2	-	:	AWW	1	4	2

10.36 REAR IO ASSY (1/3) [BOARD_IF BLOCK]


from/to MAIN ASS'Y



MODEL		
ITEM	USED	VACANT
R	8701-8704	
C		
Q		
IC		
F		
X		
L		
D		
CN	8701	

NOTES

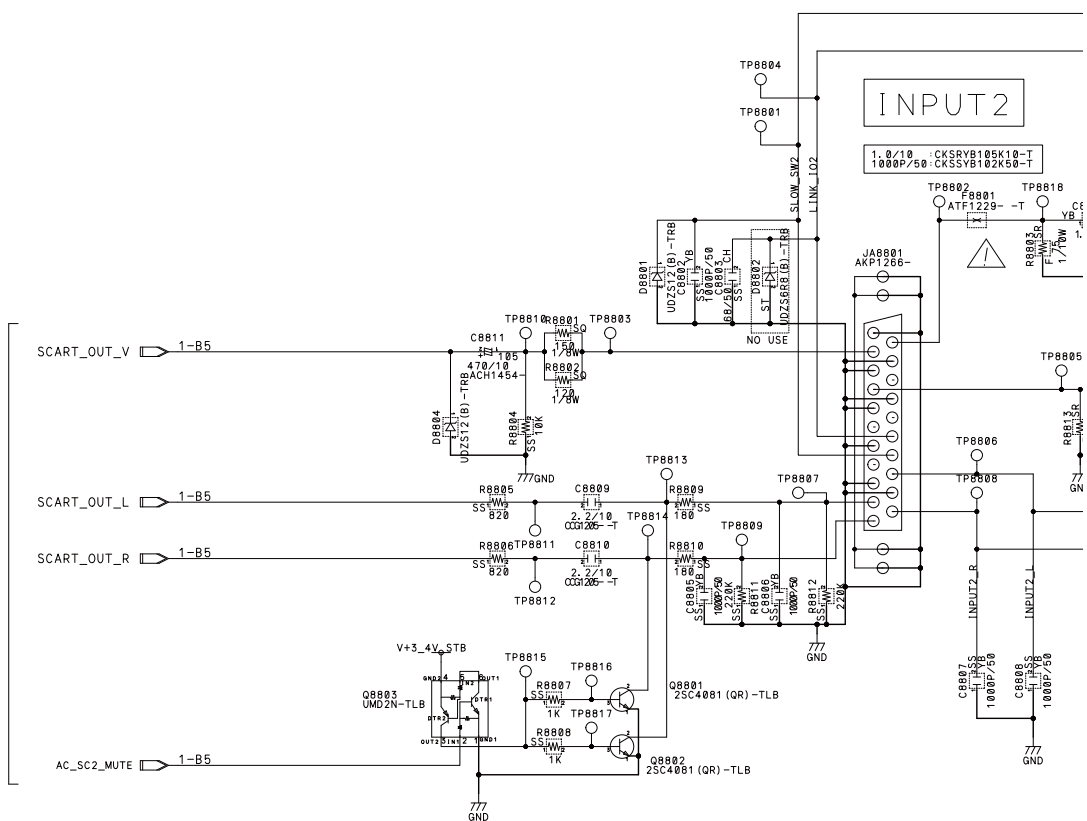
RESISTORS

 SS RS1/16SS***J-T

* RESISTORS
Indicated in Ω, ±5%, 1/16W Toler
unless otherwise noted, k:kΩ, M:MΩ

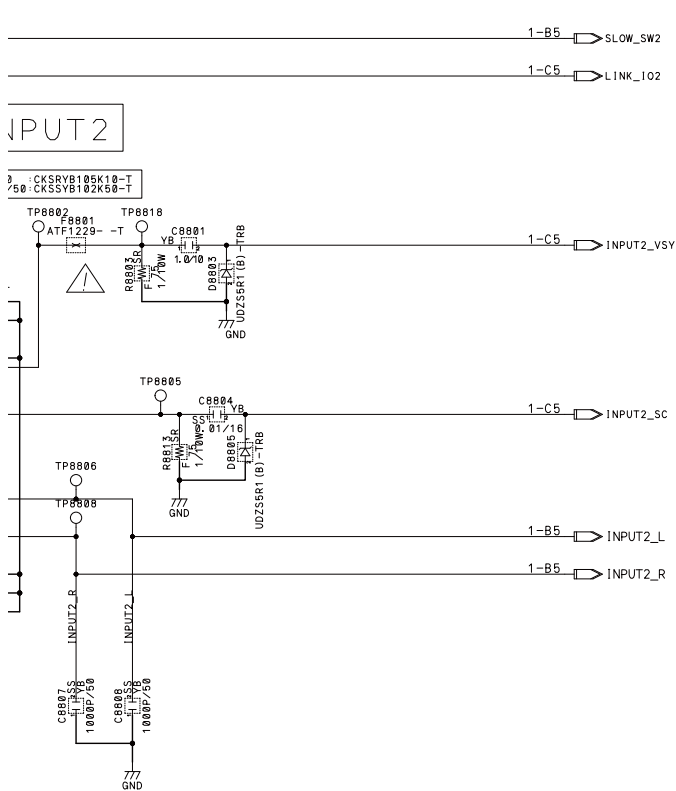
△

F



MODEL		
ITEM	USED	VACANT
R	8801-8813	
C	8801-8811	
Q	8801-8803	
IC		
F	8801	
JA	8801	
L		
D	8801-8805	8802
CN		


RESISTORS		
$\frac{1}{\text{SW}}$ SQ	RS1/8SQ***J-T	
$\frac{1}{\text{SW}}$ SR	RS1/10SR***J-T	
$\frac{1}{\text{SW}}$ SS	RS1/16SS***J-T	



INPUT2

- | | |
|---------------------------|-------------------------------|
| 1. Audio R output | 11. Not used |
| 2. Audio R input | 12. Not used |
| 3. Audio L output | 13. Earth |
| 4. Common earth for audio | 14. Not used |
| 5. Earth | 15. Chroma S-Video input |
| 6. Audio L input | 16. Not used |
| 7. Not used | 17. Earth for video |
| 8. Audio-video control | 18. Earth |
| 9. Earth | 19. Video output |
| 10. AV link control | 20. Video input/S-Video input |
| | 21. Plug shield |

Connection pin assignments for SCART

The  mark found on some component parts should be replaced with same parts (safety regulation authorized) of identical designation.

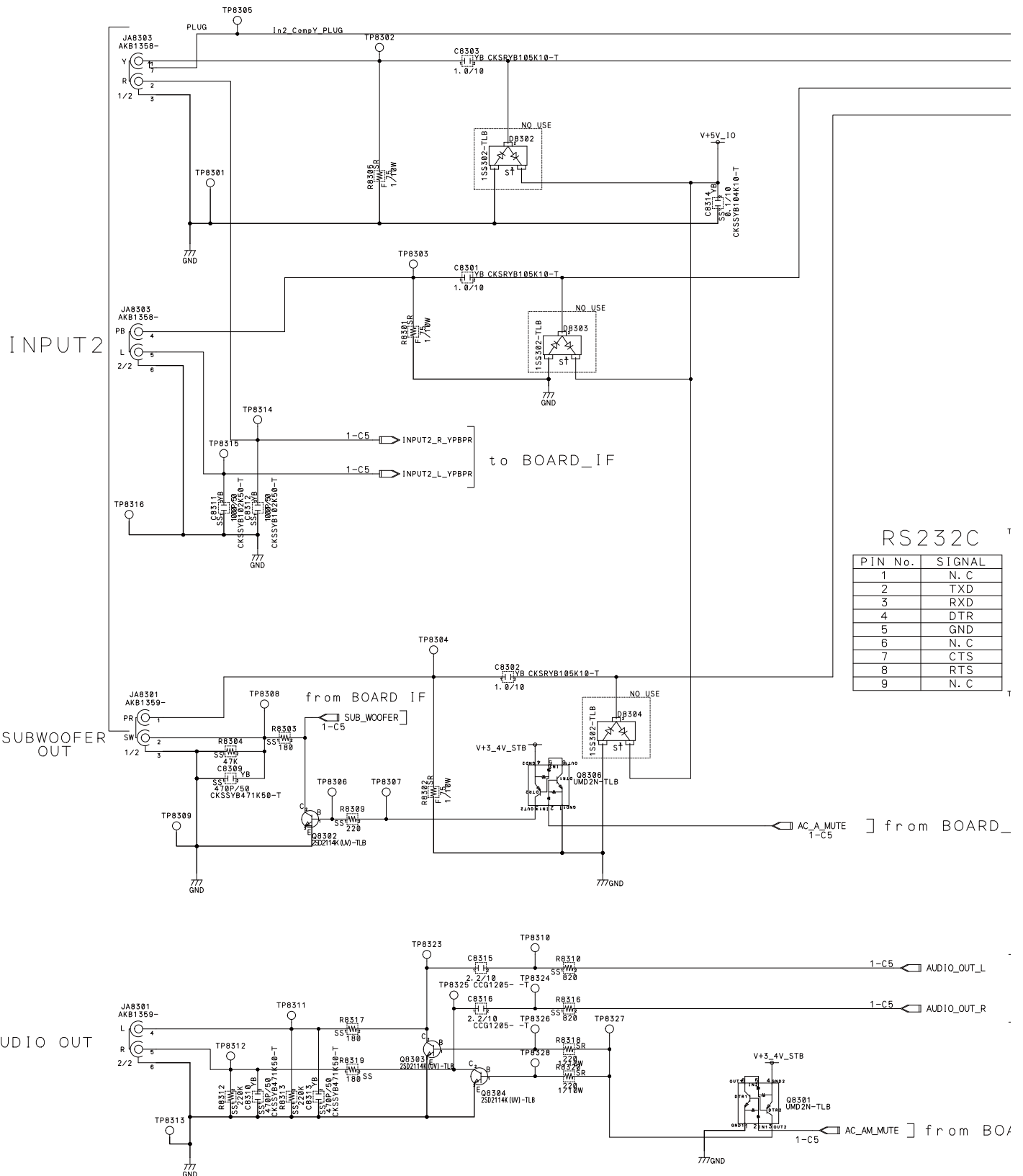
NOTES	
RESISTORS	CAPACITORS
RS1/8SQ***J-T	YB CKSRYB***K**~T
RS1/10SR***J-T	CH CCSSCH***J50-T
RS1/16SS***J-T	YB CKSSYB***K**~T

RESISTORS indicated in Ω , $\pm 5\%$, 1/16W Tolerance, unless otherwise noted, k: k Ω , M: M Ω .

CAPACITORS indicated in Capacity (uF)/Voltage (V), unless otherwise noted, p: pF, unless otherwise noted, voltage is 50V, except electrolytic capacitor.

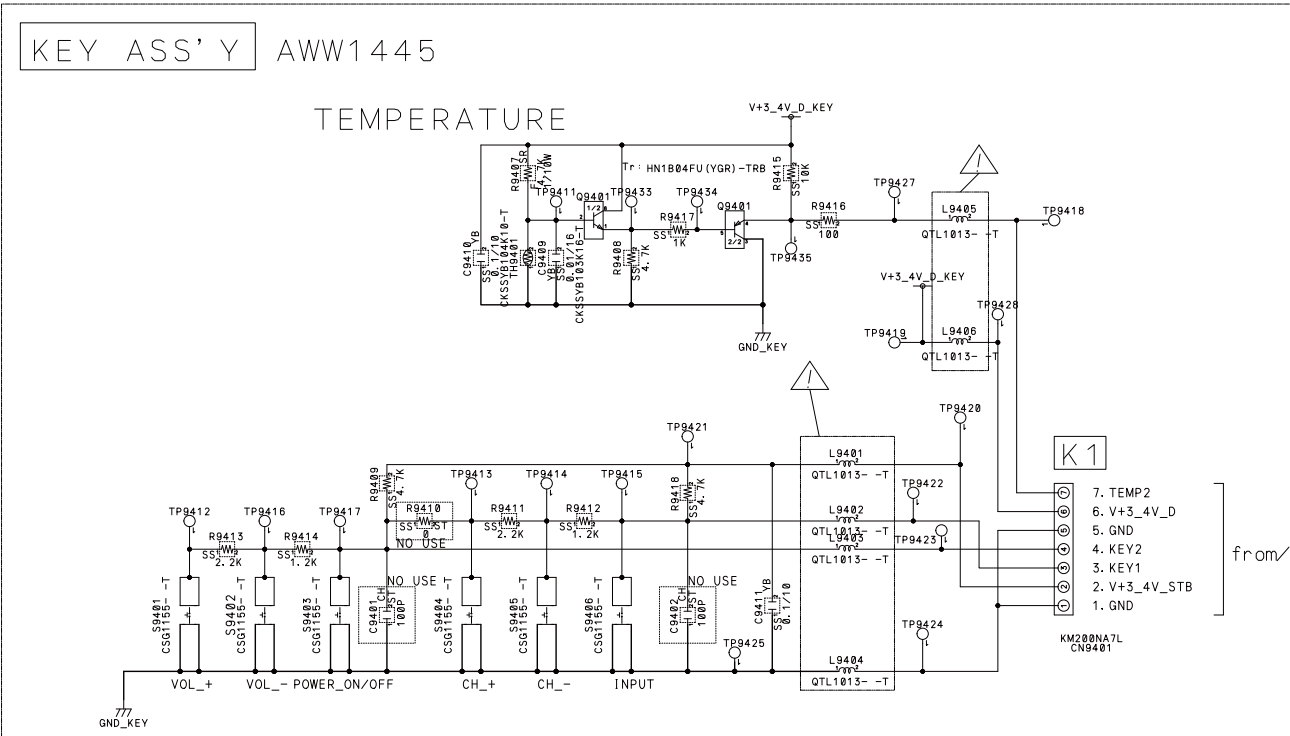
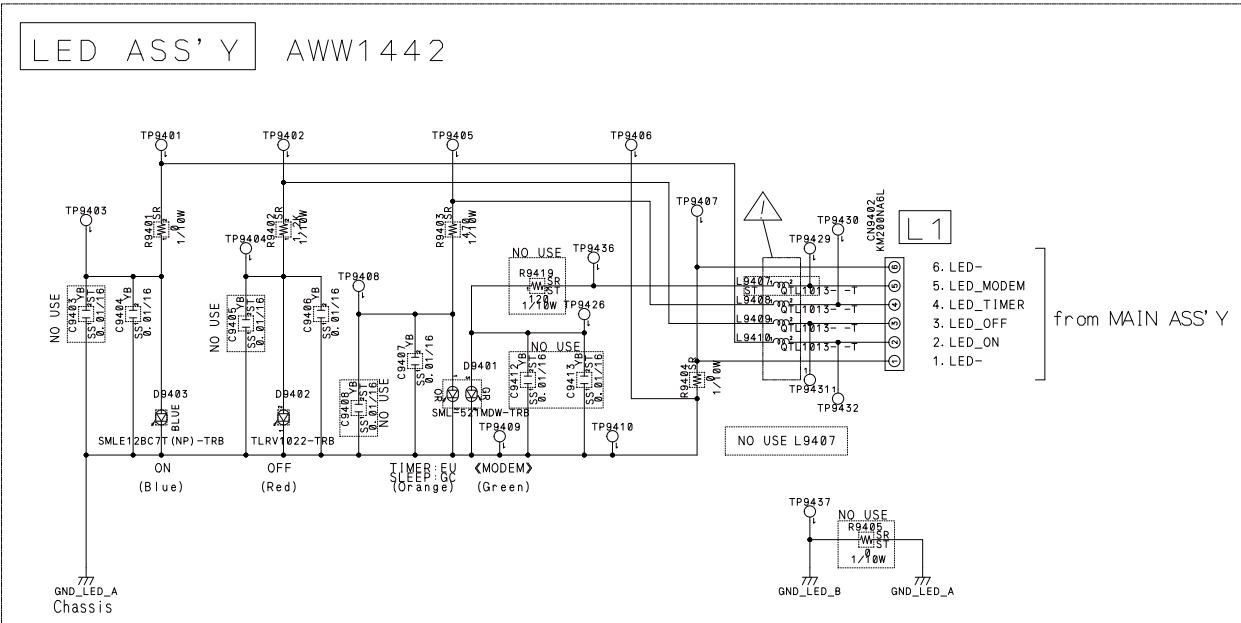
EUKUGO ASS'Y (EU) (2/6)
REAR I/O ASS'Y
TO BLOCK
AWV2571-
AWV1241
A02W1441

10.38 REAR IO ASSY (3/3) [IO_1 BLOCK]



The
should
regulat

10.39 LED AND KEY ASSYS



MODEL	USED	VACANT
ITEM	9401-9405, 9407-9419	9405, 9410, 9419
R	9401-9413	9405, 9408, 9412, 9413
C	9401	
Q		
IC		
S	9401-9406	
TH	9401	
L	9401-9410	9407
D	9401-9403	
CN	9401, 9402	

RESISTORS	CAPACITORS
SR 1/10W RS1/10SR***J-T	CH CCSRCH***J50-T
SS RS1/16SS***J-T	VB CKSSYB***K*-T

* RESISTORS
Indicated in Ω , $\pm 5\%$, 1/16W Tolerance
unless otherwise noted, k: k Ω , M: M Ω .
* CAPACITORS
Indicated in Capacity (pF) / Voltage (V)
unless otherwise noted, p: pF
Indication without voltage is 50V
except electrolytic capacitor.

The Δ mark
should be re-
regulation a



A



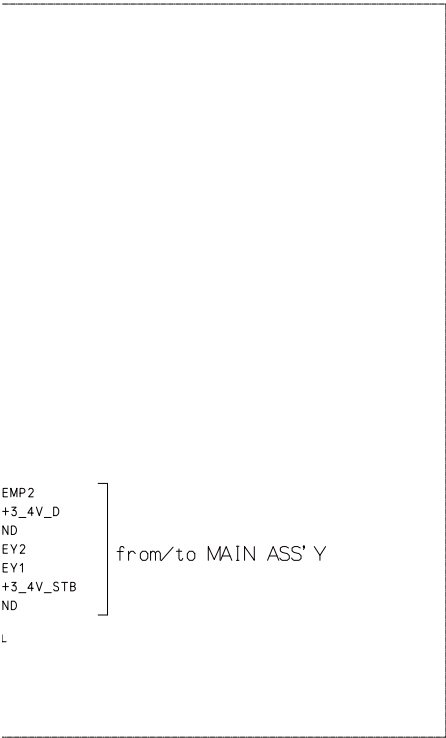
B




C



D



E

The  mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

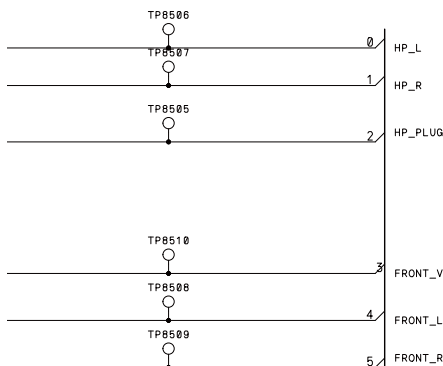


F

FUKUGO ASS'Y (EU/GC) (4/6)
REV ASS'Y
AWV2571-
AWV1442
AWV1446

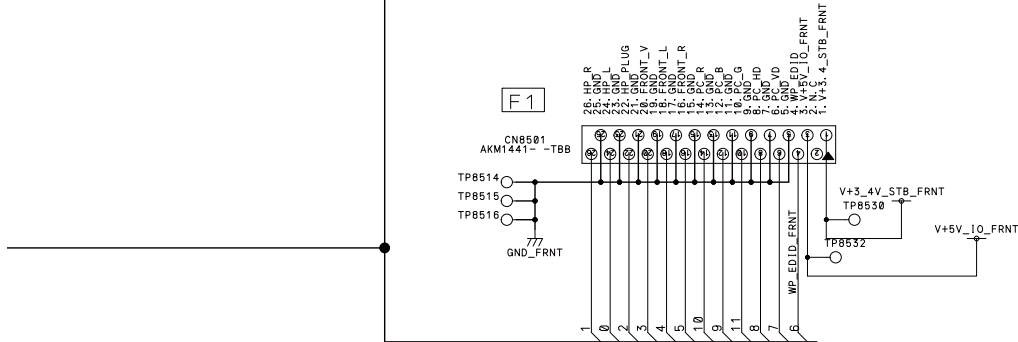


Y AWW1443



FRONT_AV[0:11]

from/to MAIN ASS'Y



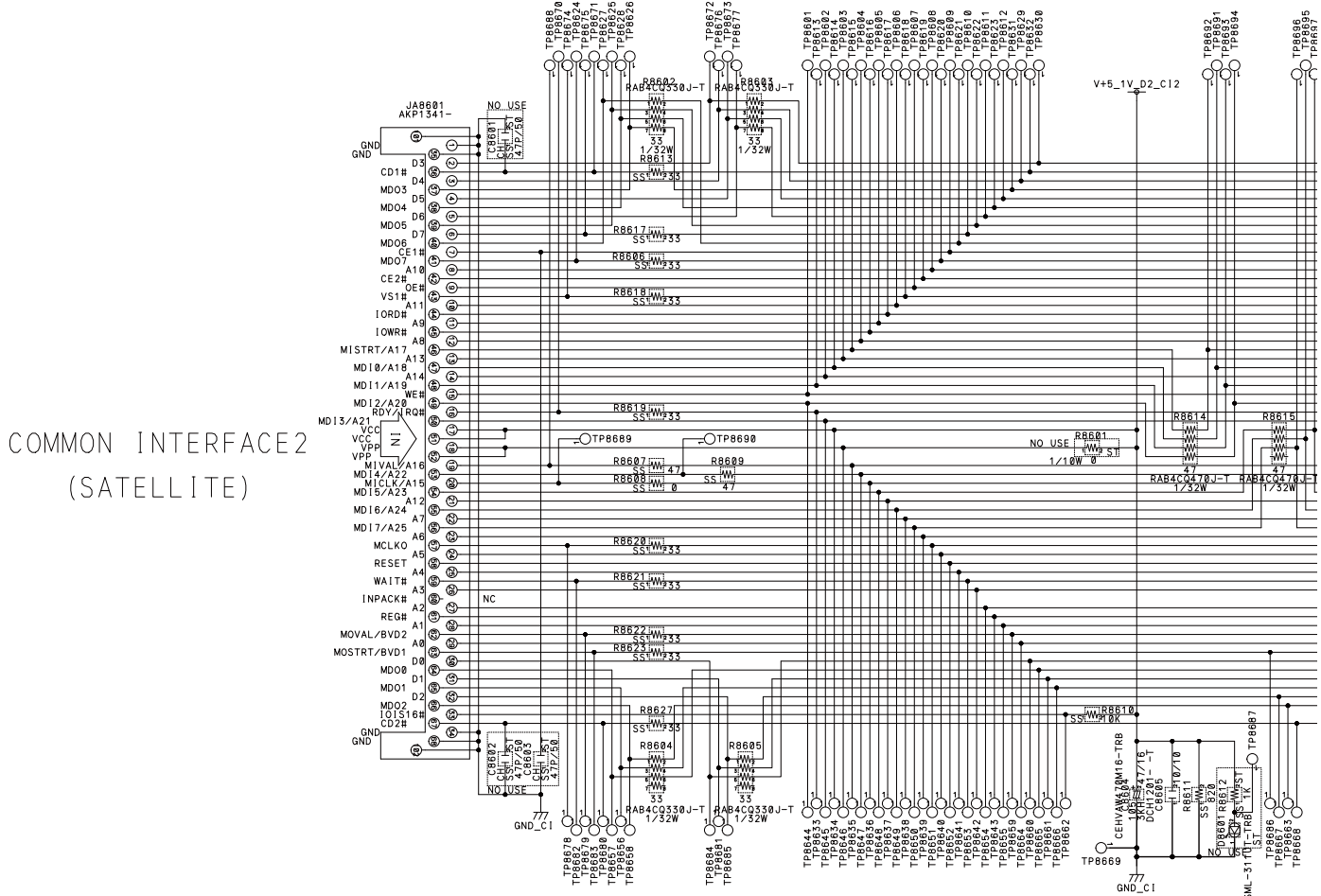
MODEL		
ITEM	USED	VACANT
R	8501-8504, 8506-8512, 8514-8527	
C	8501-8515	8505, 8506, 8509
Q	8501-8504	
IC	8501, 8502	
F		
JA	8501, 8503	
L	8501, 8502	8501, 8502
D	8501-8509, 8511	8501-8506, 8509, 8511
CN	8501, 8503	

FUKUGO ASS'Y (EU) (5/6)
FRONT_IO ASS'Y

AWV2571-
AWW1443

10.41 CI CARD ASSY

CI CARD ASS'Y AWW1444



NOTES

RESISTORS	CAPACITORS
RS1/10S***J-T	CH CCSSCH***J50-T
SS RS1/16SS***J-T	SS

* RESISTORS
Indicated in Ω, ±5%, 1/16W Tolerance
unless otherwise noted, k:kΩ, M:MΩ.
* CAPACITORS
Indicated in Capacity (μF) / Voltage (V)
unless otherwise noted, p:pF
Indication without voltage is 50V
except electrolytic capacitor.

MODEL	ITEM	USED
R	8601-8615, 8617-8623, 8627	
Q	8601-8605	
IC		
F		
JA	8601	
L		
D	8601	
CN	8601, 8602	

10.42 VOLTAGES AND WAVEFORMS

[1]VOLTAGES

A

MAIN_BLOCK_Assy

REAR_IO_Assy

M11 CN4002 (AKM1399- -TBB)		Voltage (V)	R1 CN8701 (AKM1399- -TBB)	
NO.	Name		Name	NO.
1	V+5V_IO	5.0	V+5V_IO	50
2	N.C.	0	N.C.	49
3	V+3_4V_STB_232C	3.4	V+3_4V_STB_232C	48
4	N.C.	0	N.C.	47
5	V+3_4V_STB	3.4	V+3_4V_STB	46
6	N.C.	0	N.C.	45
7	TXD_232C_1	3.4	TXD_232C_1	44
8	RXD_232C_1	3.4	RXD_232C_1	43
9	232C_EN_B	0	232C_EN_B	42
10	232C_DET	0/3.4	232C_DET	41
11	GND	0	GND	40
12	AUDIO_OUT_L	5.9	AUDIO_OUT_L	39
13	GND	0	GND	38
14	AC_AM_MUTE	0	AC_AM_MUTE	37
15	GND	0	GND	36
16	AUDIO_OUT_R	5.9	AUDIO_OUT_R	35
17	GND	0	GND	34
18	INPUT2_PR	2.4	INPUT2_PR	33
19	GND	0	GND	32
20	AC_A_MUTE	0	AC_A_MUTE	31
21	GND	0	GND	30
22	SUB_WOOFER	0	SUB_WOOFER	29
23	GND	0	GND	28
24	INPUT2_PB	2.4	INPUT2_PB	27
25	GND	0	GND	26
26	IN2_YPbPr_L	0	INPUT2_YPBPR_L	25
27	GND	0	GND	24
28	INPUT2_Y	2.4	INPUT2_Y	23
29	GND	0	GND	22
30	IN2_COMPY_PLUG	4.9	IN2_COMPY_PLUG	21
31	IN2_YPbPr_R	0	INPUT2_YPBPR_R	20
32	GND	0	GND	19
33	INPUT2_VSY	2.6	INPUT2_VSY	18
34	GND	0	GND	17
35	SCART2_OUT_V	5.1	SCART2_OUT_V	16
36	GND	0	GND	15
37	INPUT2_SC	2.2	INPUT2_SC	14
38	GND	0	GND	13
39	LINK_IO2	4.7	LINK_IO2	12
40	SLOW_SW2	0	SLOW_SW2	11
41	GND	0	GND	10
42	INPUT2_L	0	INPUT2_L	9
43	GND	0	GND	8
44	INPUT2_R	0	INPUT2_R	7
45	GND	0	GND	6
46	SCART_OUT_L	5.9	SCART_OUT_L	5
47	GND	0	GND	4
48	SC2_MUTE	2.9	AC_SC2_MUTE	3
49	GND	0	GND	2
50	SCART_OUT_R	5.9	SCART_OUT_R	1

B

C

D

E

F

MAIN_BLOCK_Assy

FRONT_IO_Assy

M12 CN4003 (AKM1441- -TBB)		Voltage (V)	F1 CN8501 (AKM1441- -TBB)	
NO.	Name		Name	NO.
1	HP_R	2.1	HP_R	26
2	GND	0	GND	25
3	HP_L	2.1	HP_L	24
4	GND	0	GND	23
5	HP_PLUG	0/3.1	HP_PLUG	22
6	GND	0	GND	21
7	FRONT_V	2.5	FRONT_V	20
8	GND	0	GND	19
9	FRONT_L	-0.2 / 0.2	FRONT_L	18
10	GND	0	GND	17
11	FRONT_R	-0.2 / 0.2	FRONT_R	16
12	GND	0	GND	15
13	PC_R	1.8	PC_R	14
14	GND	0	GND	13
15	PC_B	1.8	PC_B	12
16	GND	0	GND	11
17	PC_G	1.8	PC_G	10
18	GND	0	GND	9
19	PC_HD	0/3.4	PC_HD	8
20	GND	0	GND	7
21	PC_VD	0/3.4	PC_VD	6
22	GND	0	GND	5
23	WP_EDID	0	WP_EDID	4
24	V+5V_IO_FRONT	5.0	V+5V_IO_FRONT	3
25	N.C	0	N.C	2
26	V+3_4V_STB_FRONT	3.4	V+3_4V_STB_FRONT	1

MAIN_BLOCK_Assy

CARD_Assy

M21 CN4101 (AKM1398- -TBB)		Voltage (V)	C11 CN8601 (AKM1398- -TBB)	
NO.	Name		Name	NO.
1	CARD_B_DET	0	CARD_B_DET	1
2	MDOB2	0.1	MDO2	2
3	MDOB1	0.1	MDO1	3
4	MDOB0	0.1	MDO0	4
5	GND	0	GND	5
6	MOSTRTB	0.1	MOSTRT	6
7	MOVALB	0.1	MOVAL	7
8	GND	0	GND	8
9	MCLK0B	0.1	MCLK0	9
10	GND	0	GND	10
11	MDIB7	1.6	MDI7	11
12	MDIB6	1.6	MDI6	12
13	MDIB5	1.6	MDI5	13
14	GND	0	GND	14
15	MCLKIB	1.6	MCLKI	15
16	GND	0	GND	16
17	MDIBI4	1.6	MDI4	17
18	MIVALB	1.6	MIVAL	18
19	GND	0	GND	19
20	MDIB3	1.6	MDI3	20
21	MDIB2	1.6	MDI2	21
22	MDIB1	1.6	MDI1	22
23	MDIBI0	1.6	MDI0	23
24	MISTRBTB	1.6	MISTRT	24
25	GND	0	GND	25
26	MDOB7	0	MDO7	26
27	MDOB6	0	MDO6	27
28	MDOB5	0	MDO5	28
29	MDOB4	0	MDO4	29
30	MDOB3	0	MDO3	30
31	GND	0	GND	31
32	VS1#_B	2.8	VS1#	32
33	IORD#_B	1.6	IORD#	33
34	IOWR#_B	1.6	IOWR#	34
35	GND	0	GND	35
36	RESETB	1.6	RESET	36
37	WAITB#	0	WAIT#	37
38	REG#_B	1.6	REG#	38
39	CD2B#	5.0	CD2#	39
40	GND	0	GND	40

MAIN_BLOCK_Assy

CARD_Assy

M22 CN4102 (AKM1398- -TBB)		Voltage (V)	C12 CN8602 (AKM1398- -TBB)	
NO.	Name		Name	NO.
1	CARD_B_DET	0	CARD_B_DET	1
2	D2	0	D2	2
3	D1	0	D1	3
4	D0	0	D0	4
5	GND	0	GND	5
6	A0	1.6	A0	6
7	A1	1.6	A1	7
8	A2	1.6	A2	8
9	A3	1.6	A3	9
10	GND	0	GND	10
11	A4	1.6	A4	11
12	A5	1.6	A5	12
13	A6	1.6	A6	13
14	A7	1.6	A7	14
15	A12	1.6	A12	15
16	GND	0	GND	16
17	IREQB#	0	IREQ#	17
18	WE#_B	1.6	WE#	18
19	A14	1.6	A14	19
20	A13	1.6	A13	20
21	A8	1.6	A8	21
22	Vcc	0	Vcc	22
23	Vcc	0	Vcc	23
24	Vcc	0	Vcc	24
25	Vcc	0	Vcc	25
26	GND	0	GND	26
27	A9	1.6	A9	27
28	A11	1.6	A11	28
29	OE#_B	1.6	OE#	29
30	CE2B#	1.6	CE2#	30
31	A10	1.6	A10	31
32	CE1B#	1.6	CE1#	32
33	CD1B#	5.0	CD1#	33
34	GND	0	GND	34
35	D3	0	D3	35
36	D4	0	D4	36
37	D5	0	D5	37
38	D6	0	D6	38
39	D7	0	D7	39
40	GND	0	GND	40

A

MAIN_BLOCK_Assy

FRONT_HDMI_Assy

M13 CN4901 (AKM1442- -TBB)		Voltage (V)	H1 CN7302 (AKM1442- -TBB)	
NO.	Name		Name	NO.
1	GND	0	GND	30
2	CLK-	1.6/3.0	CLK-	29
3	CLK+	1.6/3.0	CLK+	28
4	GND	0	GND	27
5	D0-	3.3/3.0	D0-	26
6	D0+	3.3/3.0	D0+	25
7	GND	0	GND	24
8	D1-	1.6/3.0	D1-	23
9	D1+	1.6/3.0	D1+	22
10	GND	0	GND	21
11	D2-	1.6/3.0	D2-	20
12	D2+	1.6/3.0	D2+	19
13	GND	0	GND	18
14	HDMI_CEC_FRNT	3.3	HDMI_CEC_FRNT	17
15	GND	0	GND	16
16	V+3_4V_D4_HDMISW_F	3.3	V+3_4V_D4_HDMISW_F	15
17	V+3_4V_D4_HDMISW_F	3.3	V+3_4V_D4_HDMISW_F	14
18	GND	0	GND	13
19	GND	0	GND	12
20	HDMI_S_FRNT	0/3.3	HDMI_S_FRNT	11
21	DSCL_0	0/5.0	DSCL_0	10
22	DSDA_0	0/5.0	DSDA_0	9
23	WP_EDID	0	WP_EDID	8
24	HOT_P_FRNT	0/3.3	HOT_P_FRNT	7
25	V+DDC5V_FRNT	0/5.0	V+DDC5V_FRNT	6
26	GND	0	GND	5
27	GND	0	GND	4
28	GND	0	GND	3
29	GND	0	GND	2
30	GND	0	GND	1

MAIN_BLOCK_Assy

F-HDMI_Assy(for USB)

M13 CN4004 (AKM1276- -TBB)		Voltage (V)	CN7304 (AKM1291- -TBB)	
NO.	Name		Name	NO.
1	SHIELD	0	SHIELD	1
2	GND	0	GND	2
3	D+	0	D+	3
4	D-	0	D-	4
5	VBUS	5.1	VBUS	5

B

C

D

E

F

MAIN_BLOCK_Assy

KEY_Assy

M2 CN4204 (AKW1343- -TBB)		Voltage (V)	K1 CN9401 (KM200NA7L)	
NO.	Name		Name	NO.
1	OPEN	0		
2	OPEN	0		
3	TEMP2	2.1	TEMP2	7
4	GND	0	GND	5
5	KEY1	3.4	KEY1	3
6	GND	0	GND	1
7	LED-	0		
8	LED_TIMER	3.3/0		
9	LED_ON	2.8/0		
10	OPEN	0		
11	OPEN	0		
12	LED-	0		
13	LED_OFF	3.3/0		
14	LED_MODEM(LED-)	0		
15	OPEN	0		
16	V+3_4V_STB	3.4	V+3_4V_STB	2
17	KEY2	3.4	KEY2	4
18	V+3_4V_D	3.3	V+3_4V_D_KEY	6
19	OPEN	0		
20	OPEN	0		

MAIN_BLOCK_Assy

LED_Assy

M2 CN4204 (AKW1343- -TBB)		Voltage (V)	L1 CN9402 (KM200NA6L)	
NO.	Name		Name	NO.
1	OPEN	0		
2	OPEN	0		
3	TEMP2	2.1		
4	GND	0		
5	KEY1	3.4		
6	GND	0		
7	LED-	0	LED-	6
8	LED_TIMER	3.3/0	LED_TIMER	4
9	LED_ON	2.8/0	LED_ON	2
10	OPEN	0		
11	OPEN	0		
12	LED-	0	LED-	1
13	LED_OFF	3.3/0	LED_OFF	3
14	LED_MODEM(LED-)	0	LED_MODEM	5
15	OPEN	0		
16	V+3_4V_STB	3.4		
17	KEY2	3.4		
18	V+3_4V_D	3.3		
19	OPEN	0		
20	OPEN	0		

MAIN_BLOCK_Assy**FAN**

M31 CN4201 (AKM1276- -TBB)		Voltage (V)		
NO.	Name		Name	NO.
1	N.C.	0		
2	FAN_VCC2	7.0/8.9	VCC	
3	FAN_NEG2	0.1	NG	
4	GND	0	GND	
5	N.C.	0		

MAIN_BLOCK_Assy**POWER_SUPPLY**

M1 CN4203 (AKM1440-)		Voltage (V)	P2 (B26B-PNDZ-1)		Voltage (V)
NO.	Name		Name	NO.	
1	V+17V	19.1	V+5_1V_STB	26	4.9
2	V+5_1V_STB	4.9	V+17V	25	19.1
3	GND	0	GND	24	0
4	GND	0	GND	23	0
5	V+12V	13.0	V+12V	22	13.0
6	V+12V	13.0	V+12V	21	13.0
7	GND	0	GND	20	0
8	GND	0	GND	19	0
9	V+6_5V	6.6	V+6_5V	18	6.6
10	V+6_5V	6.6	V+6_5V	17	6.6
11	V+6_5V	6.6	V+6_5V	16	6.6
12	V+6_5V	6.6	V+6_5V	15	6.6
13	GND	0	GND	14	0
14	GND	0	GND	13	0
15	GND	0	GND	12	0
16	GND	0	GND	11	0
17	V+3_4V_STB	3.4	V+3_4V_STB	10	3.4
18	V+3_4V_STB	3.4	V+3_4V_STB	9	3.4
19	V+3_4V_STB	3.4	V+3_4V_STB	8	3.4
20	V+3_4V_STB	3.4	V+3_4V_STB	7	3.4
21	GND	0	V+3_4V_STB	6	3.4
22	V+3_4V_STB	3.4	GND	5	0
23	PD_TRG	0	GND	4	0
24	GND	0	PD_TRG	3	0
25	AC_DET	3.1	RELAY	2	3.1
26	RELAY	3.2	AC_DET	1	3.2

[2]WAVEFORMS

Refer to the section "5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS" of the Service Manual for KRP-M01 (ARP3508) .

△

4

SIDE A

A

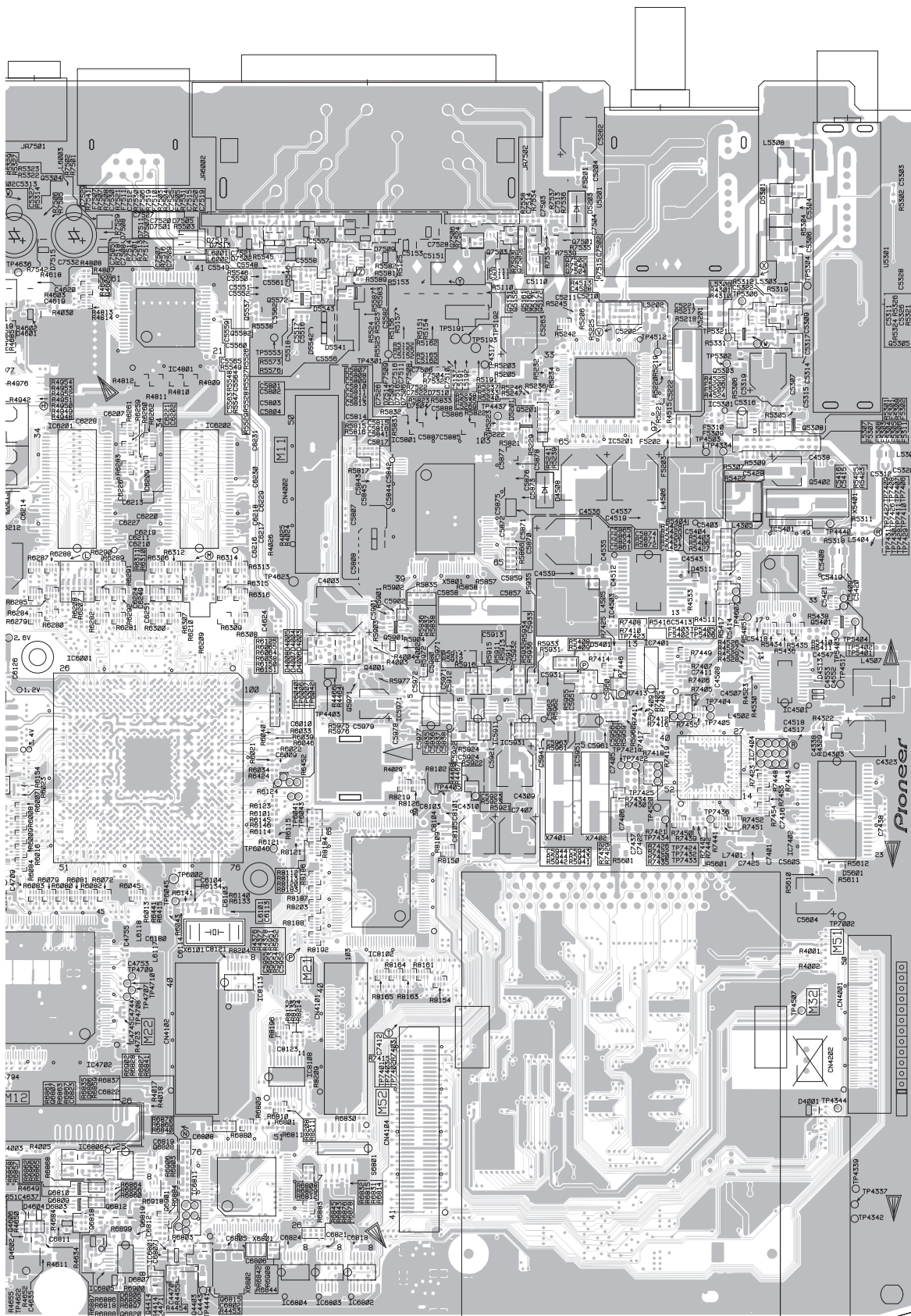
B

C

D

E

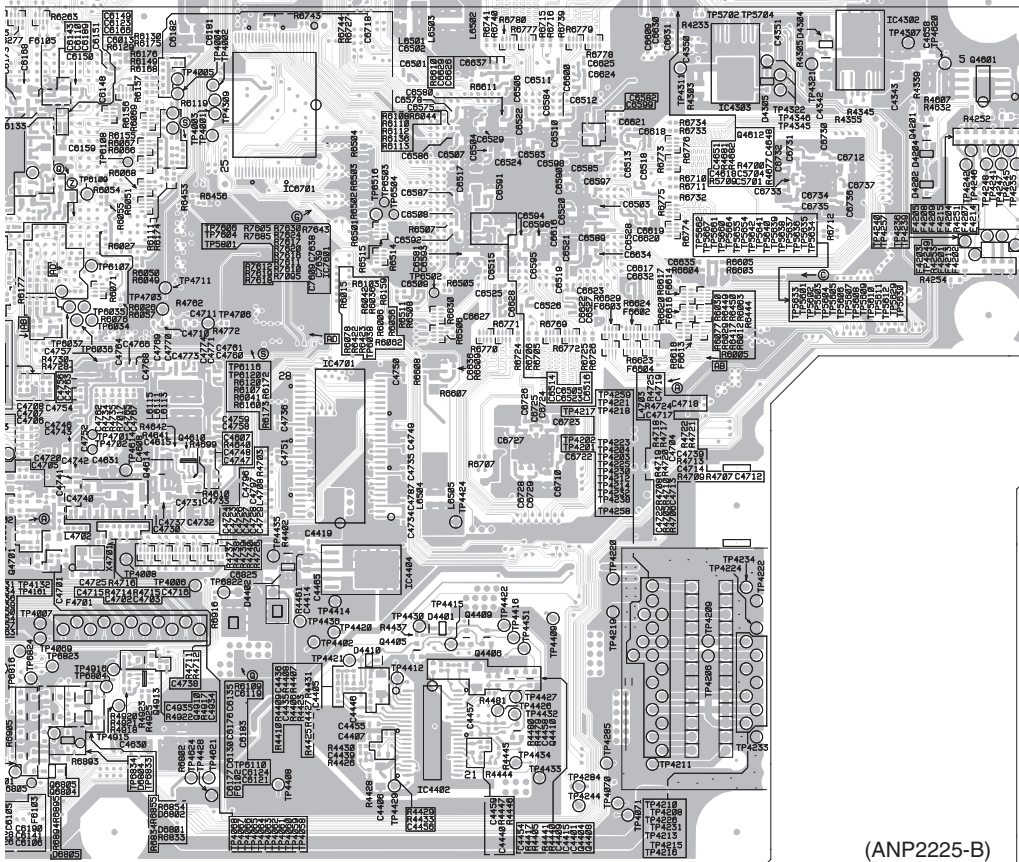
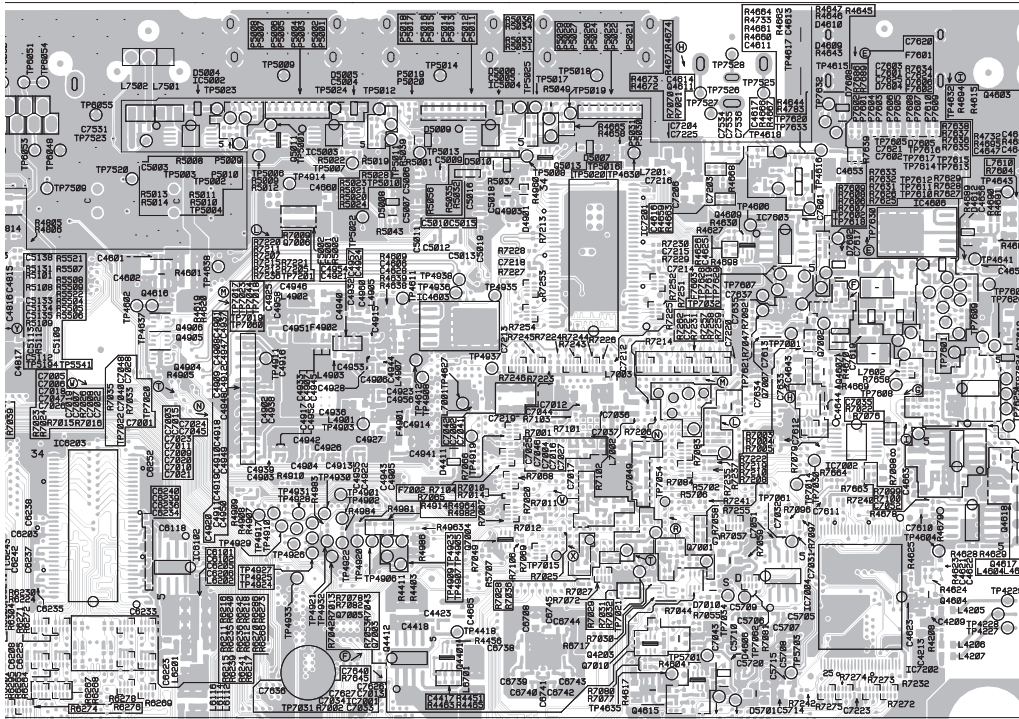
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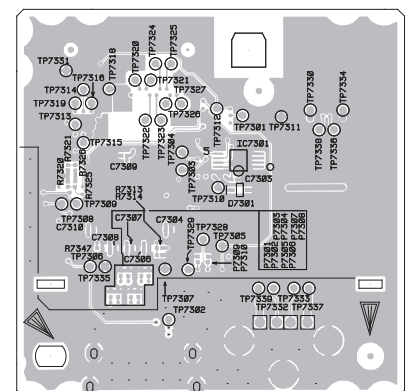
(ANP2225-B)

SIDE B

MAIN BLOCK ASSY



FRONT_HDM_USB ASSY



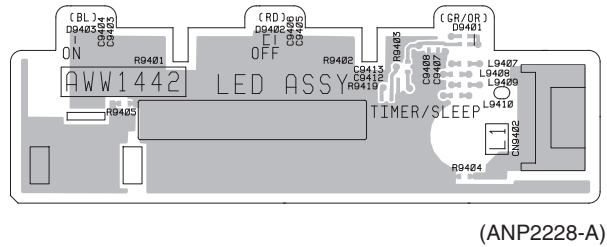
(ANP2225-B)

KRP-M01

11.2 REAR IO, LED, FRONT IO, CI CARD AND KEY ASSYS

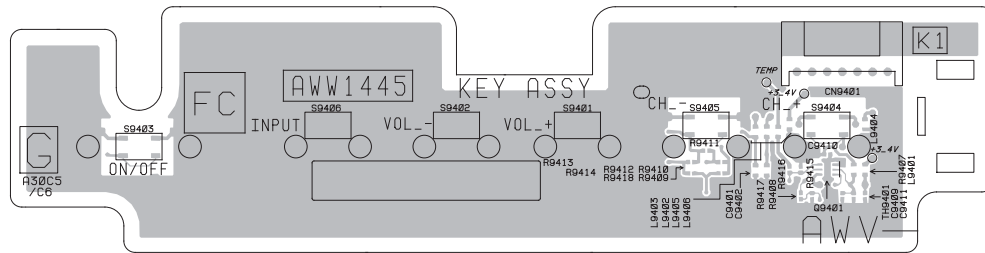
SIDE A

LED ASSY



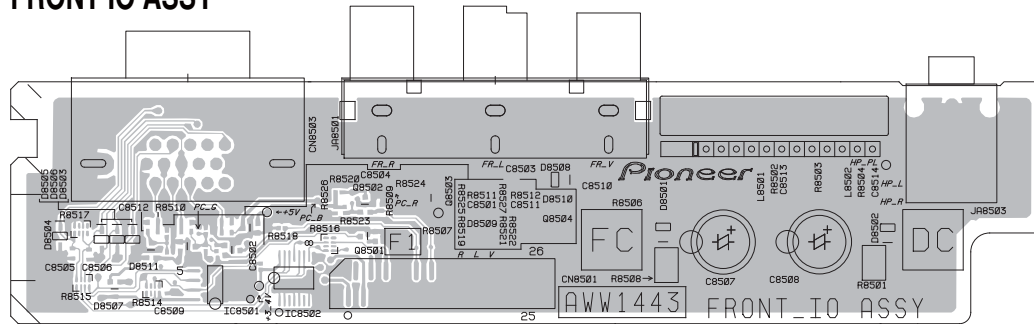
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KEY ASSY



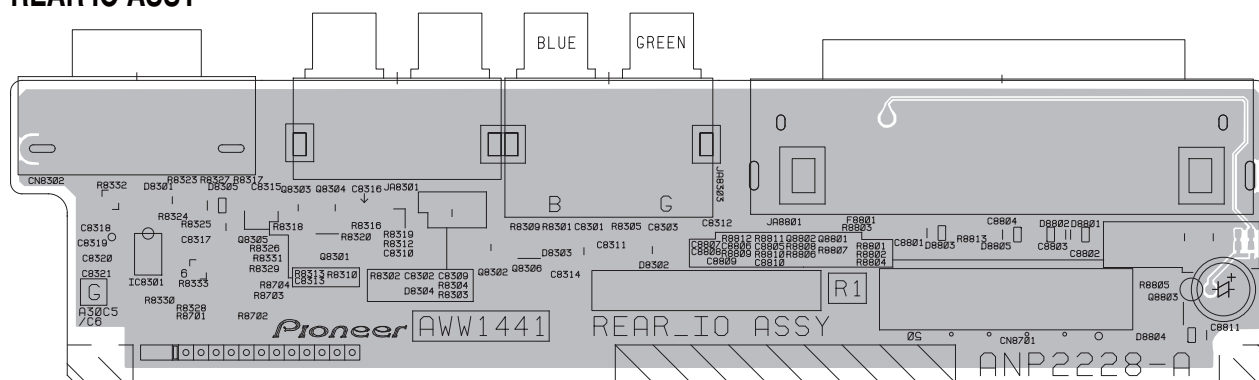
(ANP2228-A)

FRONT IO ASSY



(ANP2228-A)

REAR IO ASSY

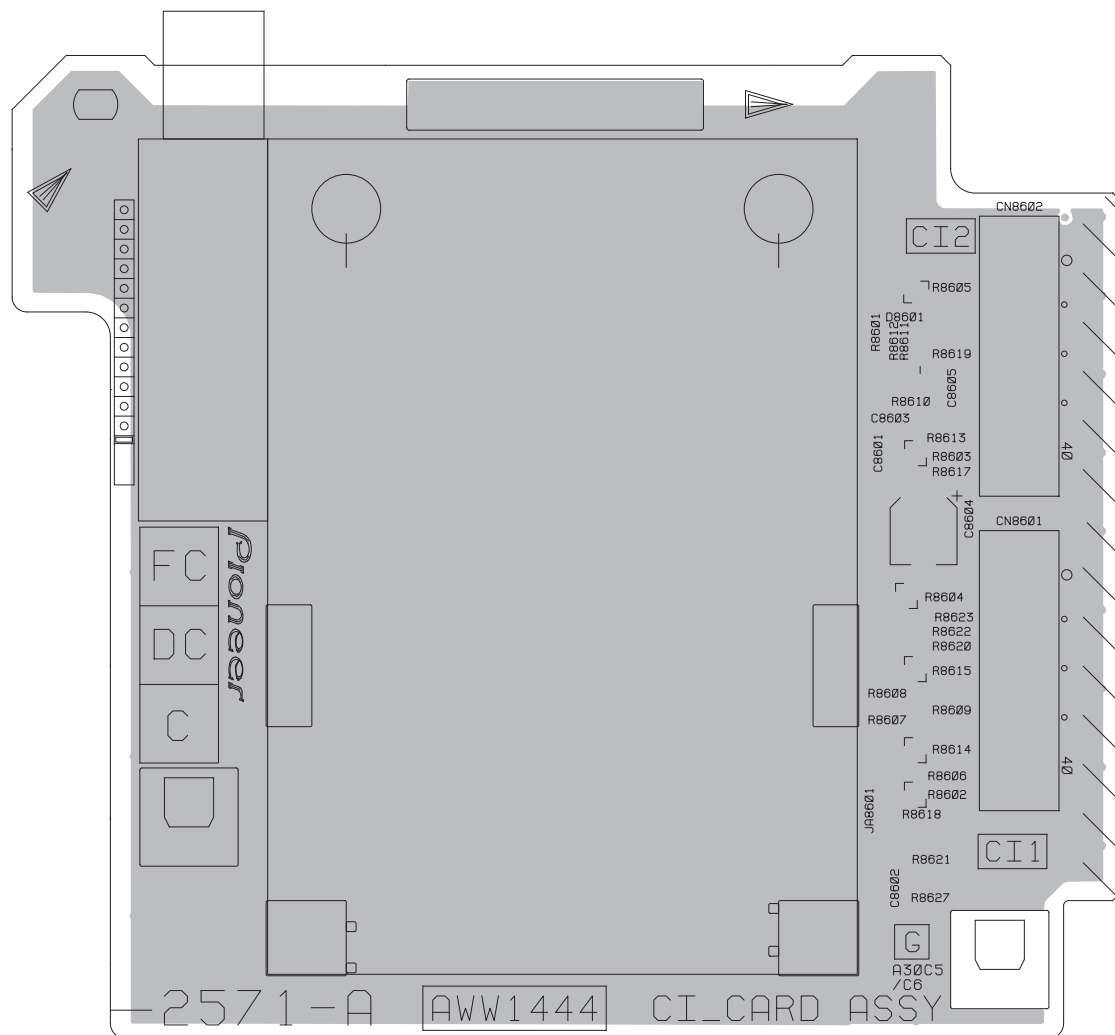


SIDE A

A

CI CARD ASSY

B



(ANP2228-A)

C

D

E

F

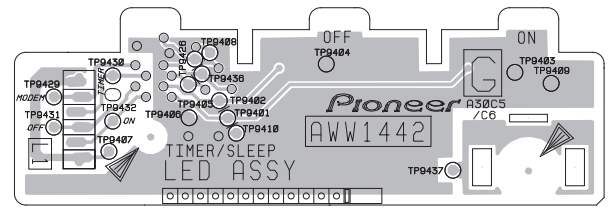


3-A)

SIDE B

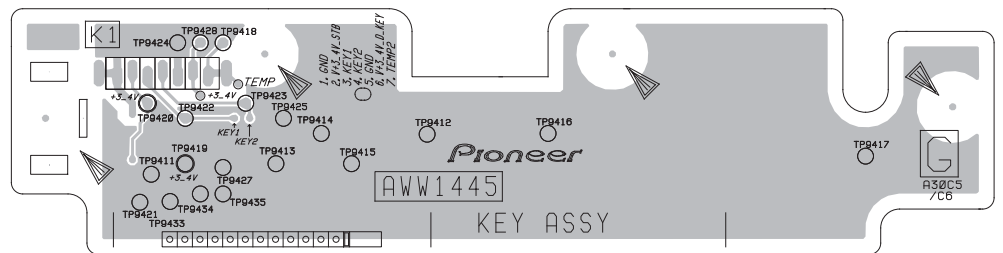
A

LED ASSY



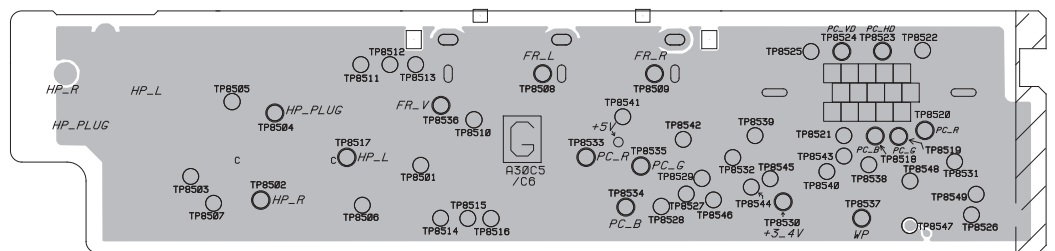
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KEY ASSY



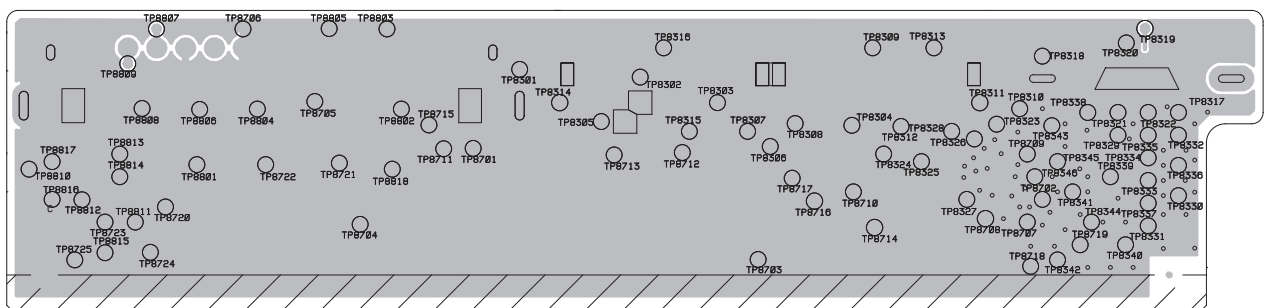
(ANP2228-A)

FRONT IO ASSY




(ANP2228-A)

REAR IO ASSY



(ANP2228-A)

12. PCB PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - When ordering resistors, first convert resistance values into code form as shown in the following examples.
- Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).
- | | | | | | | | | | | |
|-------|---|----------------------|-------|------|-------|---------|---|---|---|---|
| 560 Ω | → | 56 × 10 ¹ | → | 561 | ..... | RD1/4PU | 5 | 6 | 7 | J |
| 47 kΩ | → | 47 × 10 ³ | → | 473 | ..... | RD1/4PU | 4 | 7 | 3 | J |
| 0.5 Ω | → | R50 | ..... | RN2H | R | 5 | 0 | K | | |
| 1 Ω | → | 1R0 | ..... | RS1P | 7 | R | 0 | K | | |
- Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
- | | | | | | | | | | | | |
|---------|---|-----------------------|---|------|-------|---------|---|---|---|---|---|
| 5.62 kΩ | → | 562 × 10 ¹ | → | 5621 | | RN1/4PC | 5 | 6 | 2 | 1 | F |
|---------|---|-----------------------|---|------|-------|---------|---|---|---|---|---|
- Meaning of the figures and others in the parentheses in the parts list.
- Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.
IC 301 (A, 91, 111) IC NJM2068V

Mark No.	Description	Part No.
LIST OF ASSEMBLIES		
NSP	1..MAIN ASSY(EU MR)	AWV2570
	2..FRONT_HDM_USB_ASSY(EU MR)	AWW1412
	2..MAIN BLOCK ASSY(EU MR)	AWW1413

NSP	1..FUKUGO ASSY(EU MR)	AWV2571
	2..REAR IO ASSY(EU MR)	AWW1441
	2..LED ASSY(EU MR)	AWW1442
	2..FRONT IO ASSY(EU MR)	AWW1443
	2..CI CARD ASSY(EU MR)	AWW1444
	2..KEY ASSY(EU MR)	AWW1445


	1..POWER SUPPLY UNIT	AXY1223
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Mark No.	Description	Part No.
Unit Name: FRONT_HDM_USB ASSY(EU MR)		

SEMICONDUCTORS

IC	7301	BR24L02FV-W
IC	7302	CXB1443R
Q	7301	RN1902
Q	7302	UMD2N
D	7301	UDZS6R8(B)

MISCELLANEOUS

 L	7301,7302 CHIP BEEDS FILTER	BTX1042
JA	7301 HDMI CONNECTOR	AKP1318
JA	7303 USB CONNECTOR	VKB1248
CN	7302 30P CONNECTOR	AKM1442
CN	7304 CONNECTOR	AKM1291

RESISTORS

R	7322	RS1/16SS4701F
R	7340	RS1/8SQ0R0J
	Other Resistors	RS1/16SS###J

CAPACITORS

C	7301	ACH1421
C	7303-7311	CKSSYB104K10

Unit Name: MAIN BLOCK ASSY(EU MR)		
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SEMICONDUCTORS

NSP IC	6403	AGC1089
NSP IC	6701	AGC1088
NSP IC	6811	AGC1086
NSP IC	7202	AGC1087

MISCELLANEOUS

3001	SCREW	BPZ26P050FTC
3001	HEAT SINK B	ANH1645
3002	THERMAL SHEET B	AEB1417

RESISTORS

All Resistors	RS1/8SQ###J
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MISCELLANEOUS

 U	5201 FE	AXF1195
 U	5301 FE	AXF1191

Mark No. Description**Part No.****Mark No. Description****Part No.**

Q 4407,4408
Q 4409,4410
Q 4411,4412,4415
Q 4416

2SC4081
DTA124EUA
RSS100N03
RSS090P03

L 4502 CHIP BEEDS FILTER
L 4503 CHIP INDUCTOR(2.2 UH)
L 4505 INDUCTOR
L 4506 INDUCTOR(270 UH)

BTX1039
ATH1244
CTH1254
ATH1242

Q 4417,4418
D 4401,4402,4410
D 4405-4407

SP8M4
1SS352
RB060M-30

L 4507 INDUCTOR

ATH1235

RESISTORS

R 4503,4504,4506
R 4510,4512
R 4511
R 4524,4525
R 4536

RS1/8SQ0R0J
RS1/4SA101J
RS1/4SA150J
RS1/10SR0R0J
RS1/16SS1003D

R 4537,4539
Other Resistors

RS1/16SS3302D
RS1/16SS###J

CAPACITORS

C 4502,4506,4515,4530
C 4504
C 4507,4517
C 4527,4528
C 4529

CCSSCH101J50
CKSSYB104K10
DCH1165
CKSSYB103K25
CKSSYB223K16

C 4535-4537
C 4538
C 4539-4541,4546
C 4542,4543
C 4544,4545

ACH1495
CEHVAW100M35
CKSRYB104K50
CKSRYB104K25
CKSRYB224K16

C 4547
C 4548,4549
C 4552,4553

CKSRYB682K50
CKSRYB104K16
BCG1059

Block Name: POWER_3 BLOCK(EH)**SEMICONDUCTORS**

IC 4601
IC 4602-4604,4606
Q 4601,4603,4618
Q 4602
Q 4604,4606,4617

LTC3407EMSE-2
NJM2846DL3-18
RSS090P03
UPA1917TE
2SC4081

Q 4605,4608
Q 4609,4610,4612
Q 4613
Q 4614,4615
Q 4616

DTC124EUA
RN1902
RSS100N03
RTQ045N03
RTQ040P02

D 4603,4607,4608,4612
D 4609,4610

1SS352
RB551V-30

MISCELLANEOUS

L 4601 CHIP BEEDS FILTER
L 4602,4603 CHIP INDUCTOR(2.2 UH)
L 4604,4605 CHIP BEEDS FILTER

BTX1039
ATH1244
BTX1042

RESISTORS

R 4601,4606-4617,4632
R 4659
R 4663
R 4666
R 4667

RS1/8SQ0R0J
RS1/16SS1503D
RS1/16SS1003D
RS1/16SS2003D
RS1/16SS6202D

R 4687,4688,4694
Other Resistors

RS1/8SQ0R0J
RS1/16SS###J

CAPACITORS

C 4602,4621,4623,4634
C 4604,4608

CKSSYB104K10
CKSRYB104K16

MISCELLANEOUS

L 4401-4406 CHIP BEEDS FILTER
L 4409-4411 INDUCTOR(2.8 UH)
L 4413-4416 CHIP BEEDS FILTER

BTX1039
ATH1243
BTX1039

RESISTORS

R 4401-4403,4411-4413
R 4406,4438
R 4407,4425-4427,4441
R 4415,4416,4488
R 4421

RS1/8SQ0R0J
RS1/16SS1203D
RS1/16SS3302D
RS1/8SQ0R0J
RS1/16SS5602D

R 4429
R 4440
R 4442
R 4444,4445
Other Resistors

RS1/16SS2702D
RS1/16SS1002D
RS1/16SS3902D
RS1/16SS3302D
RS1/16SS###J

CAPACITORS

C 4401,4415,4458
C 4402,4413,4414,4421
C 4403-4406,4409,4410
C 4407,4455,4457
C 4411

CKSRYB104K16
DCH1201
DCH1165
CKSRYB682K50
CCG1232

C 4417,4423,4426,4434
C 4420,4424,4444
C 4422,4429,4430
C 4427,4465
C 4432,4437

CKSSYB104K10
CKSSYB471K50
DCH1201
CKSRYB105K10
CCSSCH101J50

C 4435
C 4436,4439
C 4438
C 4440
C 4441

CCSSCH470J50
CKSSYB152K50
CCSSCH330J50
CKSSYB682K25
CKSSYB221K50

C 4447,4448,4451,4452
C 4454
C 4462-4464,4466-4468
C 4470

BCG1059
CKSRYB334K10
BCG1059
CKSSYB104K10

Block Name: POWER_2 BLOCK(EH)**SEMICONDUCTORS**

IC 4501
IC 4503
Q 4502
Q 4504
Q 4507

BD8624EFV
LNBH23PP/1B
DTC124EUA
RN1902
RTQ045N03

Q 4509
Q 4510
D 4501
D 4508
D 4509

DTA124EUA
2SC4081
1SS352
D1FM3
TDZ5R1

D 4510,4511
D 4513

RB520S-30
RB060M-30

MISCELLANEOUS

L 4501 CHIP BEEDS FILTER

BTX1042

5		6		7		8	
Mark	No. Description	Part No.	Mark	No. Description	Part No.		
C	4605,4606,4609,4654	CKSRYB105K10	C	4806,4808,4810	CKSSYB473K16		
C	4610,4612	BCG1059	C	4811-4817	CKSSYB104K10		
C	4615	CKSSYB102K50					
C	4616,4617	CCSSCH470J50	C	4818-4820	DCH1201	A	
C	4618	CKSSYB103K16	Block Name: HDMI_RX BLOCK(EH)				
C	4626,4628,4638,4640	DCH1201	SEMICONDUCTORS				
C	4636,4649,4651	CKSSYB104K10	IC	4901	SI19135ACTU		
C	4641,4656	DCH1201	Q	4901,4902	DTC124EUA		
			Q	4903	2SC4081		
C	4645,4648	CCSSCH101J50	Q	4904-4907,4914	UMD2N		
			Q	4908	RN1902		
Block Name: VDEC BLOCK(EH)							
SEMICONDUCTORS			Q	4910	2SA1576A		
IC	4701	HY57V641620FTP-6	Q	4913	HN1C01FU	B	
IC	4702	CM0048BF	D	4901	RB520S-30		
Q	4701,4702	2SA1576A	MISCELLANEOUS				
MISCELLANEOUS			L	4901-4905 CHIP SOLID INDUCTOR	QTL1013		
L	4701,4707 CHIP BEEDS FILTER	BTX1042	L	4906,4907 CHIP BEEDS FILTER	BTX1042		
L	4702,4703 COIL	LCYC6R8K2125	F	4901,4902 CHIP FERRITE BEADS	ATF1211		
L	4708 CHIP BEEDS FILTER	BTX1042	⚠ X	4901 CRYSTAL(28.322 MHz)	ASS1226		
⚠ F	4701 INDUCTOR	CTF1557	CN	4901 30P CONNECTOR	AKM1442		
⚠ X	4701 CRYSTAL(28.63636 MHz)	ASS1214	RESISTORS				
RESISTORS			R	4940-4943,4976-4979	ACN1275		
R	4703,4727	RS1/8SQ0R0J	R	4944	RAB4CQ100J		
R	4710,4720	RS1/16SS1500F	R	4945-4954	RAB4CQ680J	C	
R	4711,4721	RS1/16SS2201F	R	4986	RS1/8SQ0R0J		
R	4712,4722	RS1/16SS1101F	Other Resistors		RS1/16SS###J		
R	4713,4715,4723	RS1/16SS2701F	CAPACITORS				
			C	4901-4928,4932,4933	CKSSYB102K50		
R	4714	RS1/16SS1001F	C	4929	CKSSYB103K16		
R	4726,4737-4745	RAB4CQ470J	C	4930,4931	CCSSCH9R0D50		
R	4746-4752	RAB4CQ101J	C	4934,4937-4940	CKSSYB104K10		
Other Resistors		RS1/16SS###J	C	4936,4941,4946,4951	DCH1201		
CAPACITORS			C	4942-4945,4947-4950	CKSSYB104K10		
C	4701,4704-4711	CKSRYB105K10	C	4952-4960	CKSSYB104K10	D	
C	4702,4703	CCSRCH300J50	Block Name: HDMI_SW BLOCK(EH)				
C	4712,4718,4720	CKSSYB103K16	SEMICONDUCTORS				
C	4713,4717	CCSSCH330J50	IC	5001	CXB1444R		
C	4714,4719	CCSSCH680J50	IC	5002-5004	BR24L02FV-W		
			Q	5007-5009	UMD2N		
C	4715,4716	CKSSYB102K50	Q	5011-5013	RN1902		
C	4721	CEHVAW101M6R3	D	5004-5006	UDZS6R8(B)		
C	4722-4736,4738-4774	CKSSYB104K10	MISCELLANEOUS				
C	4737,4793-4797	DCH1201	F	5001,5002 CHIP SOLID INDUCTOR	DTL1041		
C	4787	CKSSYB104K10	JA	5001-5003 HDMI CONNECTOR	AKP1318	E	
Block Name: ADCC BLOCK(EH)			RESISTORS				
SEMICONDUCTORS			R	5006	RAB4CQ0R0J		
IC	4801	AD9985KSTZ-110	R	5058	RS1/16SS4701F		
MISCELLANEOUS			Other Resistors		RS1/16SS###J		
L	4801,4802 CHIP BEEDS FILTER	BTX1042	CAPACITORS				
RESISTORS			C	5001	BCG1059		
R	4804	RS1/16SS2701F	C	5003-5007,5009-5013	CKSSYB104K10		
R	4805-4808	RS1/16SS470J	C	5014	DCH1201		
R	4809-4814	RAB4CQ680J	C	5015,5016,5018,5019	CKSSYB104K10		
R	4815	RAB4CQ103J	Block Name: AV_SW BLOCK(EH)				
Other Resistors		RS1/8SQ###J	SEMICONDUCTORS				
CAPACITORS			IC	5101	R2S11006FT	F	
C	4801	CKSSYB823K10					
C	4802	CKSSYB822K16					
C	4803-4805,4807,4809	CKSSYB104K10					

Mark No. Description

Q 5151,5152,5161,5162
Q 5171,5172

Part No.

2SA1576A
2SA1576A

Mark No. Description**CAPACITORS**

C 5801-5804,5807-5814
C 5815,5817,5841
C 5818,5842,5844,5846
C 5824,5861,5864,5865
C 5835-5838

Part No.

CKSRYB105K10
CKSSYB473K16
CKSSYB103K16
CCSSCH560J50
CCG1205

MISCELLANEOUS

L 5191-5193 CHIP BEEDS FILTER

BTX1042

RESISTORS

R 5151,5154,5161,5164
R 5171,5174
R 5191
Other Resistors

RS1/10SR510J
RS1/10SR510J
RS1/8SQ0R0J
RS1/16SS###J

C 5843,5845,5847,5855
C 5851,5853,5911,5912
C 5852,5854,5856,5859
C 5857,5858
C 5860,5862,5871,5873

DCH1201
DCH1165
CKSSYB103K16
CCSSCH9R0D50
DCH1201

CAPACITORS

C 5105,5131,5152,5153
C 5109-5112,5138-5143
C 5132-5136,5151,5161
C 5137
C 5162,5163,5172,5173

DCH1201
CKSRYB105K10
CKSSYB104K10
DCH1165
DCH1201

C 5863,5870,5872,5874
C 5875,5877,5886,5888
C 5876,5878,5885,5887
C 5901,5902,5913
C 5921,5922,5941,5942

CKSSYB103K16
DCH1201
CKSSYB103K16
CKSSYB102K50
DCH1201

C 5171

CKSSYB104K10

C 5923,5924,5943,5944
C 5931,5932
C 5933
C 5951,5952,5955,5956
C 5960,5962,5978

CCSSCH150J50
DCH1165
CKSSYB682K25
CKSSYB472K16
DCH1201

Block Name: RGB_SW BLOCK(EH)**SEMICONDUCTORS**

IC 5501
Q 5537
Q 5571,5581
Q 5572,5582

R2S11001FT
2SA1576A
HN1B04FU
HN1C01FU

C 5961,5963,5977
C 5971,5972,5980
C 5979

CKSSYB104K10
CKSRYB105K10
CEHVAW470M6R3

MISCELLANEOUS

L 5501 CHIP BEEDS FILTER

BTX1042

Block Name: DVB_S_TUNER BLK(EH)**SEMICONDUCTORS**

IC 5201
⚠ D 5202
D 5203

STV-0903
1.5SMC24A
RB060L-40

MISCELLANEOUS

L 5202 CHIP BEEDS FILTER
F 5201 FERRITE CORE
F 5206,5207 FERRITE CORE
⚠ X 5201 CRYSTAL(27 MHz)

BTX1042
VTF1080
VTF1091
ASS1225

RESISTORS

R 5201,5203,5205
R 5204
R 5242
R 5243,5244
Other Resistors

RS1/10SR0R0J
RS1/10SR103J
RAB4CQ103J
RAB4CQ470J
RS1/16SS###J

CAPACITORS

C 5201,5202
C 5203
C 5204,5212-5220
C 5221,5222
C 5225-5261

BCG1059
CKSSYB102K50
CKSSYB103K16
CCSSCH120J50
CKSSYB103K16

C 5262,5263
C 5264,5265,5267-5269

CEHVAW101M6R3
CKSSYB104K10

Block Name: DVB_T_TUNER BLK(EH)**SEMICONDUCTORS**

IC 5301
Q 5303
Q 5304,5305
Q 5306
Q 5307

TC7W66FU
DTC124EUA
2SA1576A
HN1B04FU
HN1C01FU

Q 5308
⚠ D 5301

RN1902
1.5SMC6.8A

Block Name: MSP BLOCK(EH)**SEMICONDUCTORS**

IC 5801
IC 5911,5931,5951
IC 5971
Q 5901
Q 5971

MSP5651M-QK-C3
NJM4565V
BH3544F
HN1A01FU
2SC4081

D 5807,5808

UDZS8R2(B)

MISCELLANEOUS

⚠ X 5801 CRYSTAL(20.25 MHz)

ASS1217

RESISTORS

R 5806
R 5821-5823
R 5993-5995
Other Resistors

RS1/10SR0R0J
RAB4CQ471J
RS1/8SQ0R0J
RS1/16SS###J

5		6		7		8	
Mark No.	Description	Part No.	Mark No.	Description	Part No.		
MISCELLANEOUS			Block Name: CIMAX BLOCK(EH)				
L	5301,5303,5304 CHIP COIL	BTH1121	SEMICONDUCTORS				A
L	5306-5308 CHIP BEEDS FILTER	BTX1042	IC	8101	TC74VHC08FTS1		
F	5301-5306 FERRITE CORE	VTF1080	IC	8102	CIMAXSP2L		
F	5307,5308 INDUCTOR	CTF1557	IC	8103,8104,8113	TC74VHC32FTS1		
F	5309-5313 FERRITE CORE	VTF1080	IC	8105,8106	TC74VHCT245AFTS1		
			IC	8107,8108	TC74VHCT541AFTS1		
RESISTORS			IC	8109-8112	TC74VHCT373AFT		
R	5302,5311,5318	RS1/10SR0R0J	Q	8101-8106	DTC124EUA		
R	5304	RS1/8SQ0R0J	MISCELLANEOUS				
Other Resistors		RS1/16SS###J	F	8101,8102 FERRITE CORE	VTF1091		
CAPACITORS			RESISTORS				B
C	5303,5316	CKSSYB103K16	R	8101-8103	RS1/8SQ0R0J		
C	5307,5311,5324,5330	DCH1201	R	8126,8219	RAB4CQ471J		
C	5309	CKSSYB104K10	R	8145,8152-8157,8160	RAB4CQ470J		
C	5319	CEHVAW101M6R3	R	8150,8151	RAB4CQ103J		
C	5322	CKSRYB682K50	R	8158,8159	RAB4CQ221J		
C	5329	BCG1064	R	8161,8163-8165	RAB4CQ470J		
Block Name: COFDEM BLOCK(EH)			R	8162,8173,8174,8180	RAB4CQ104J		
SEMICONDUCTORS			R	8167,8175,8176,8181	RAB4CQ220J		
IC	5401	DRX3975D-QI-B1	R	8169-8172,8177,8179	RAB4CQ470J		
Q	5402	UMD2N	R	8178,8182,8196,8200	RAB4CQ101J		
MISCELLANEOUS							
L	5401-5403 CHIP BEEDS FILTER	BTX1042	R	8183-8189,8191,8192	RAB4CQ470J		C
L	5404 CHIP COIL	LCYAR82J2520	R	8193,8197,8198,8201	RAB4CQ220J		
F	5402-5404 FERRITE CORE	VTF1091	R	8194,8199,8203,8210	RAB4CQ470J		
△ X	5401 CRYSTAL RESONATOR	VSS1221	R	8202	RAB4CQ101J		
			R	8211	RAB4CQ470J		
RESISTORS			Other Resistors			RS1/16SS###J	
R	5401	RS1/8SQ0R0J	CAPACITORS				
R	5434-5436	RAB4CQ470J	C	8101	CKSSYB102K50		
R	5438	RAB4CQ471J	C	8102,8103	DCH1201		
Other Resistors		RS1/16SS###J	C	8104-8111,8114-8123	CKSSYB104K10		
			C	8112,8113	CKSRYB105K10		D
CAPACITORS			Block Name: CI_CARD_1 BLOCK(EH)				
C	5401,5402	CCSSCH101J50	MISCELLANEOUS				
C	5403	CKSRYB104K16	JA	5601 PC CARD CONNECTOR	AKP1341		
C	5404,5417,5419,5420	CKSSYB104K10	RESISTORS				
C	5408	CCSSCJ3R0C50	All Resistors			RS1/16SS###J	
C	5409	CCSSCH180J50	CAPACITORS				
			C	5604	CEHVAW470M16		
C	5411,5412	CKSSYB103K16	C	5605	DCH1201		
C	5415,5416	CCSSCH8R0D50	Block Name: VBI_SLICER BLOCK(EH)				E
C	5418,5421,5427,5429	CKSSYB102K50	SEMICONDUCTORS				
C	5422,5424	CCG1205	IC	5701	TC90173FG		
C	5423,5425,5426,5428	CKSSYB104K10	D	5701	HSM107S-E		
			MISCELLANEOUS				
C	5430	CKSSYB104K10	L	5701,5702 CHIP BEEDS FILTER	BTX1042		
Block Name: TS_SELECT BLOCK(EH)			RESISTORS				
SEMICONDUCTORS			R	5701	RS1/8SQ0R0J		
IC	8001-8003	TC74LCX157FTS1	R	5714,5715	RAB4CQ151J		
IC	8051	TC74LCX245FTS1	R	5716	RAB4CQ0R0J		F
RESISTORS			Other Resistors			RS1/16SS###J	
R	8005,8006	RAB4CQ151J	MISCELLANEOUS				
R	8053-8055,8057	RAB4CQ470J	RESISTORS				
R	8056,8058	RAB4CQ103J	R	5701	RS1/8SQ0R0J		
Other Resistors		RS1/16SS###J	R	5714,5715	RAB4CQ151J		
			R	5716	RAB4CQ0R0J		
CAPACITORS			Other Resistors			RS1/16SS###J	
C	8001-8003,8051	CKSSYB104K10	MISCELLANEOUS				

Mark No. Description**CAPACITORS**

C 5701
C 5704
C 5705-5712,5715-5720
C 5714

Part No.

CKSRYB474K10
CCSSCH680J50
CKSSYB104K10
DCH1201

Block Name: 7404_0 BLOCK(EH)**SEMICONDUCTORS**

IC 6001

BCM7404XKPB11G

MISCELLANEOUS

F 6001 FERRITE CORE
JA 6002 RJ45 CONNECTOR TRNS

VTF1084
VKN2078

RESISTORS

R 6002-6004
R 6007-6009,6016
R 6014
R 6018
R 6019

RS1/10SR750J
RAB4CQ101J
RS1/16SS1101F
RS1/8SQOR0J
RS1/16SS1001F

R 6021,6022,6039,6040
R 6037
R 6045,6066-6069,6072
R 6051,6071
R 6073

RS1/16SS49R9F
RS1/16SS1002F
RAB4CQ470J
RAB4CQ472J
RS1/10SR75R0F

R 6079-6084
Other Resistors

RAB4CQ101J
RS1/16SS###J

CAPACITORS

C 6001
C 6004
C 6008,6015,6016
C 6009-6011,6013,6014

CKSSYB102K50
CCSSCH150J50
DCH1201
CKSSYB104K10

Block Name: 7404_1 BLOCK(EH)**SEMICONDUCTORS**

IC 6102

LP2995M

MISCELLANEOUS

L 6101 INDUCTOR
L 6103 CHIP BEEDS FILTER
L 6111-6118 CHIP BEEDS FILTER
F 6101-6111 FERRITE CORE
⚠ X 6101 CRYSTAL RESONATOR

LCTAW2R2J2520
BTX1042
BTX1042
VTF1084
BSS1134

RESISTORS

R 6133,6134
R 6156,6157
Other Resistors

RS1/10SR3010F
RAB4CQ472J
RS1/16SS###J

CAPACITORS

C 6101,6102,6180-6183
C 6103,6104
C 6105,6106,6109-6112
C 6113,6114
C 6115,6118-6120,6123

BCG1059
CCSSCH120J50
CKSSYB103K16
CCSSCH9R0D50
CKSSYB103K16

C 6116,6117,6188-6190
C 6121,6122,6125,6128
C 6124,6126,6127
C 6129,6134,6135
C 6130-6133

ACG1122
CKSSYB102K50
CKSSYB103K16
CKSSYB102K50
CKSSYB103K16

C 6136,6137
C 6139-6158,6161-6164
C 6159,6160,6165,6168

ACH1421
CKSSYB104K10
DCH1201

Mark No. Description

C 6166,6167,6170-6173
C 6169,6174,6175,6187

C 6176-6179,6184-6186

Part No.

CKSSYB104K10
DCH1201

CKSSYB104K10

Block Name: 7404_DDR BLOCK(EH)**SEMICONDUCTORS**

IC 6201-6204

EDD5116AFTA-5B-E

MISCELLANEOUS

L 6201,6202 CHIP BEEDS FILTER

BTX1042

RESISTORS

R 6259-6262,6283
R 6263,6267-6269
R 6264-6266,6270,6284
R 6271-6282,6286-6290
R 6285,6291-6295,6301

RAB4CQ510J
RAB4CQ220J
RAB4CQ101J
RAB4CQ220J
RAB4CQ101J

R 6296-6300,6302-6309
R 6310,6311,6315,6316
R 6312-6314
Other Resistors

RAB4CQ220J
RAB4CQ101J
RAB4CQ220J
RS1/16SS###J

CAPACITORS

C 6201-6204
C 6205
C 6207,6208,6210-6222
C 6209,6223,6249
C 6224-6248,6250-6253

CKSSYB471K50
BCG1059
CKSSYB104K10
DCH1201
CKSSYB104K10

Block Name: 7404_FLASH BLOCK(EH)**SEMICONDUCTORS**

IC 6401
IC 6402
D 6401

TC74VHC02FTS1
PST3628UR
1SS352

RESISTORS

R 6457-6466
R 6467
R 6471
Other Resistors

RAB4CQ472J
RAB4CQ103J
RS1/10SR0R0J
RS1/16SS###J

CAPACITORS

C 6401
C 6402-6405
C 6406

CKSSYB103K16
CKSSYB104K10
CKSSYB473K16

Block Name: AV_IO BLOCK(EH)**SEMICONDUCTORS**

Q 7501,7502,7505,7506
Q 7503,7504
D 7501-7505,7507
D 7506,7508,7515,7516
D 7509-7513

2SC4081
UMD2N
UDZS5R1(B)
UDZS12(B)
UDZS5R1(B)

MISCELLANEOUS

L 7502 CHIP COIL
F 7501-7503 INDUCTOR
F 7504-7511 CHIP FERRITE BEADS
JA 7501 OPT. LINK OUT 12MB/S
JA 7502 RGB CONNECTOR

BTH1103
CTF1557
ATF1229
VKS1001
AKP1265

JA 7503 MINI JACK(4P)

AKN1073

RESISTORS

R 7501,7503-7505,7507

RS1/10SR151J

5			6			7			8		
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.				
R	7508		RS1/10SR151J	Block Name: ARIA_DDR BLOCK(EH)							
R	7509		RS1/10SR0R0J	SEMICONDUCTORS							
R	7519-7522,7530-7532		RS1/10SR75R0F	IC	6702-6704		EDD1232ABBH-5C-E	A			
R	7541		RS1/10SR75R0F								
Other Resistors			RS1/16SS###J	MISCELLANEOUS							
CAPACITORS				L	6701-6703	CHIP BEEDS FILTER	BTX1042				
C	7501-7504		CCG1205	RESISTORS							
C	7505-7511,7513,7514		CKSSYB102K50	R	6745-6780		RAB4CQ470J				
C	7512		CKSSYB103K16	Other Resistors					RS1/16SS###J		
C	7515		CCSSCH680J50	CAPACITORS							
C	7516		CKSSYB102K50	C	6701-6707		CKSSYB104K10				
C	7519-7522,7526-7529		CKSRYB105K10	C	6708,6710,6712,6714		DCH1201				
C	7525,7530		CCSRCH101J50	C	6718		CKSSYB103K16	B			
C	7531		CKSRYB105K10	C	6722-6745		CKSRYB105K10				
C	7532,7533		ACH1454	Block Name: IF_UCOM BLOCK(EH)							
C	7534-7536		CKSSYB471K50	SEMICONDUCTORS							
Block Name: ARIA_0 BLOCK(EH)				IC	6801		PST3628UR				
SEMICONDUCTORS				IC	6802-6804		TC74VHC126FTS1				
IC	6501		PD6568A	IC	6805		TC74VHC08FTS1				
MISCELLANEOUS				IC	6806		TC74VHC00FTS1				
L	6501-6503	CHIP BEEDS FILTER	BTX1042	Q	6801-6803,6812-6814		DTC124EUA				
L	6504,6505	CHIP BEEDS FILTER	BTX1039	Q	6804,6805		2SC4081				
L	6506-6509	INDUCTOR	LCYC1R0K1608	Q	6806,6807,6817		2SA1576A	C			
△ X	6501	CRYSTAL(27 MHz)	ASS1225	Q	6808		DTA124EUA				
RESISTORS				Q	6809,6810		HN1C01FU				
R	6501-6504		RS1/8SQ0R0J	Q	6816,6819,6820		DTC124EUA				
R	6506		RAB4CQ220J	Q	6901		UMD2N				
R	6514,6515		RAB4CQ103J	D	6801-6805		1SS352				
Other Resistors			RS1/16SS###J	MISCELLANEOUS							
CAPACITORS				△ X	6801	CERAMIC OSCILLATOR	CSS1616				
C	6501,6504-6513,6518		CKSSYB104K10	△ X	6802	CRYSTAL OSCILLATOR	ASS1212				
C	6502,6514,6523		DCH1201	RESISTORS							
C	6503,6515,6516		CKSRYB105K10	R	6802,6806		RS1/8SQ0R0J	D			
C	6517		CCG1232	R	6880,6885		RAB4CQ103J				
C	6519-6522,6524		CKSRYB105K10	R	6883		RAB4CQ473J				
C	6525-6528		CKSSYB104K10	R	6884		RAB4CQ471J				
C	6529-6533,6578		CKSRYB105K10	R	6893,6894,6896		RS1/10SR122J				
C	6576		CCSSCH100D50	R	6895		RS1/10SR220J				
C	6577		CCSSCH120J50	Other Resistors					RS1/16SS###J		
C	6580-6587,6589-6600		CKSRYB105K10	CAPACITORS							
Block Name: ARIA_1 BLOCK(EH)				C	6801		CKSSYB102K50				
MISCELLANEOUS				C	6802		CKSSYB472K16				
L	6601	CHIP BEEDS FILTER	BTX1042	C	6803,6804		CKSSYB471K50	E			
△ F	6601-6616	FERRITE BEADS ARRAY	ATF1228	C	6805,6806		CCSSCH8R0D50				
RESISTORS				C	6807,6809,6811		CKSSYB104K10				
R	6603,6604,6607		RS1/16SS2201F	C	6808,6812		DCH1201				
R	6609-6611		RS1/16SS2201F	C	6810		CKSSYB103K16				
R	6613-6627,6629		RAB4CQ101J	C	6814-6824		CKSSYB104K10				
R	6628		RAB4CQ121J	Block Name: EMMA2 BLOCK(EH)							
R	6630		RAB4CQ220J	SEMICONDUCTORS							
Other Resistors			RS1/16SS###J	IC	7002		TC74VHC08FTS1				
CAPACITORS				IC	7003		UPD61123F1-100KA3A				
C	6615		DCH1201	IC	7004		BR24L64F-W	F			
C	6616-6629		CKSSYB104K10	IC	7005		TC7WHU04FU				
C	6632		CCSSCH221J50	IC	7006		TC74HC4066AFT				
C	6634		CKSRYB105K10								

Mark No. Description**Part No.**

Q 7001
Q 7002,7003,7006
Q 7005,7008
Q 7007,7010
D 7010

2SJ461A
DTC124EUA
SSM6N17FU
UMD2N
1SS301

MISCELLANEOUS

L 7001-7003 CHIP BEEDS FILTER
F 7001 FERRITE CORE
F 7002 CHIP FERRITE BEADS
⚠ X 7001 CRYSTAL(27 MHz)

BTX1042
VTF1091
ATF1212
ASS1225

RESISTORS

R 7026-7028
R 7029,7036
R 7033
R 7035
R 7045,7067,7070,7073

RS1/16SS2000D
RS1/16SS6200D
RS1/16SS3300D
RS1/16SS2200D
RAB4CQ103J

R 7060-7064,7066,7068
R 7065
R 7069,7071,7083,7084
R 7072
R 7074

RAB4CQ101J
RAB4CQ470J
RAB4CQ101J
RAB4CQ221J
RAB4CQ103J

R 7075
R 7081
R 7087-7091

RAB4CQ220J
RAB4CQ222J
RAB4CQ101J

Other Resistors

RS1/16SS###J

CAPACITORS

C 7001,7003-7011
C 7014
C 7029
C 7030
C 7031,7032

CKSRYB105K10
CKSSYB102K50
CCSSCH100D50
CCSSCH120J50
CCSSCH470J50

C 7035-7040,7043
C 7041,7044,7049
C 7045-7048,7050,7051

CKSSYB104K10
DCH1201
CKSSYB104K10

Block Name: EMMA2_MEM BLOCK(EH)**SEMICONDUCTORS**

IC 7201
IC 7203

EDD5116AFTA-5B-E
LP2995M

MISCELLANEOUS

L 7201 CHIP BEEDS FILTER

BTX1042

RESISTORS

R 7213
R 7243-7246,7257-7259
R 7247-7254,7256
R 7255,7267
R 7260,7261,7268-7270

RS1/16SS1500F
RAB4CQ101J
RAB4CQ220J
RAB4CQ103J
RAB4CQ560J

R 7262,7272-7275
Other Resistors

RAB4CQ101J
RS1/16SS###J

CAPACITORS

C 7201
C 7202-7204
C 7205,7206,7225
C 7207-7221,7223
C 7226

CKSRYB105K10
BCG1059
DCH1201
CKSSYB104K10
ACH1421

Mark No. Description**Part No.****Block Name: DP_TX BLOCK****SEMICONDUCTORS**

IC 7601
IC 7602
IC 7603

S25FL016A0LMF013
GM60028H-CG
GMT2404HR0M

MISCELLANEOUS

L 7601,7602 CHIP INDUCTOR
L 7608-7610 CHIP BEEDS FILTER
F 7601-7603 CHIP FERRITE BEADS
JA 7601 DP CONNECTOR
⚠ X 7601 CRYSTAL(27 MHz)

ATH1254
BTX1042
ATF1211
AKP1340
ASS1225

RESISTORS

R 7604
R 7645
R 7649-7657,7662
R 7658
Other Resistors

RS1/8SQ0R0J
RS1/10SR2490F
RS1/16SS10R0F
RAB4CQ0R0J
RS1/16SS###J

CAPACITORS

C 7601,7608-7614,7616
C 7602
C 7603
C 7604,7605
C 7606,7607,7617,7619

CKSSYB104K10
CKSSYB471K50
BCG1059
CCSSCH120J50
DCH1201

C 7618,7621,7624-7627
C 7620,7639
C 7629-7638,7640-7650

CKSSYB104K10
DCH1201
CKSSYB104K10

Unit Name:FUKUGO ASSY(EU MR)**MISCELLANEOUS**

3001 SCREW

BPZ26P050FTC

Unit Name: REAR IO ASSY(EU MR)**Block Name: BOARD_IF BLOCK(EU MR)****MISCELLANEOUS**

CN 8701 50P CONNECTER

AKM1399

RESISTORS

All Resistors

RS1/16SS###J

Block Name: REAR_IO_0 BLOCK(EU)**SEMICONDUCTORS**

Q 8801,8802
Q 8803
D 8801,8804
D 8803,8805

2SC4081
UMD2N
UDZS12(B)
UDZS5R1(B)

MISCELLANEOUS

⚠ F 8801 CHIP FERRITE BEADS
JA 8801 RGB CONNECTOR

ATF1229
AKP1266

RESISTORS

R 8801
R 8802
R 8803,8813
Other Resistors

RS1/8SQ151J
RS1/8SQ121J
RS1/10SR75R0F
RS1/16SS###J

CAPACITORS

C 8801
C 8802,8805-8808
C 8803
C 8804

CKSRYB105K10
CKSSYB102K50
CCSSCH680J50
CKSSYB103K16

5		6		7		8	
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
C	8809,8810		CCG1205	R	8517		RAB4CQ222J
C	8811		ACH1454		Other Resistors		RS1/16SS###J
Block Name: REAR_IO_1 BLOCK(EU)				CAPACITORS			
SEMICONDUCTORS				C	8501,8510-8512		CKSRYB105K10
IC	8301		MAX3232CPW	C	8502,8509		CKSSYB104K10
Q	8301,8306		UMD2N	C	8503,8504,8513,8514		CKSSYB102K50
Q	8302-8304		2SD2114K	C	8507,8508		ACH1454
D	8301		1SS301	C	8515		CKSRYB104K16
MISCELLANEOUS				Unit Name: CI CARD ASSY(EU MR)			
JA	8301	4P PIN JACK RA	AKB1359	MISCELLANEOUS			
JA	8303	4P PIN JACK RA	AKB1358	JA	8601	PC CARD CONNECTOR	AKP1341
CN	8302	9P D-SUB SOCKET	AKP1213	CN	8601,8602	40P CONNECTER	AKM1398
RESISTORS				RESISTORS			
R	8301,8302,8305		RS1/10SR75R0F	R	8602-8605		RAB4CQ330J
R	8318,8320		RS1/10SR221J	R	8614,8615		RAB4CQ470J
R	8332		RAB4CQ101J		Other Resistors		RS1/16SS###J
	Other Resistors		RS1/16SS###J	CAPACITORS			
CAPACITORS				C	8604		CEHVAW470M16
C	8301-8303		CKSRYB105K10	C	8605		DCH1201
C	8309,8310,8313		CKSSYB471K50	Unit Name: KEY ASSY(EU MR)			
C	8311,8312		CKSSYB102K50	SEMICONDUCTORS			
C	8314,8317-8321		CKSSYB104K10	Q	9401		HN1B04FU
C	8315,8316		CCG1205	TH	9401		TH05-3H103F
Unit Name: LED ASSY(EU MR)				MISCELLANEOUS			
SEMICONDUCTORS				⚠ L	9401-9406	CHIP SOLID INDUCTOR	QTL1013
D	9401		SML-521MDW	S	9401-9406	PUSH SWITCH	CSG1155
D	9402		TLRV1022	CN	9401	L-PLUG(7P)	KM200NA7L
D	9403		SMLE12BC7T(NP)	RESISTORS			
MISCELLANEOUS				R	9407		RS1/10SR4701F
⚠ L	9408-9410	CHIP SOLID INDUCTOR	QTL1013		Other Resistors		RS1/16SS###J
CN	9402	L-PLUG(6P)	KM200NA6L	CAPACITORS			
RESISTORS				C	9409		CKSSYB103K16
	All Resistors		RS1/10SR###J	C	9410,9411		CKSSYB104K10
CAPACITORS				Unit Name: FRONT IO ASSY(EU MR)			
C	9404,9406,9407		CKSSYB103K16	SEMICONDUCTORS			
Unit Name: FRONT IO ASSY(EU MR)				IC	8501		BR24L01AFJ-W
SEMICONDUCTORS				IC	8502		TC74VHC08FTS1
IC	8501		BR24L01AFJ-W	Q	8501		DTC124EUA
IC	8502		TC74VHC08FTS1	Q	8502-8504		2SC4081
Q	8501		DTC124EUA	D	8507		1SS301
Q	8502-8504		2SC4081	MISCELLANEOUS			
D	8507		1SS301	JA	8501	PIN JACK(3P)	AKB1303
D	8508		UDZS5R1(B)	JA	8503	MINI JACK	AKN1085
MISCELLANEOUS				CN	8501	FFC CONNECTOR 26P	AKM1441
JA	8501	PIN JACK(3P)	AKB1303	CN	8503	15P D-SUB SOCKET	AKP1214
JA	8503	MINI JACK	AKN1085	RESISTORS			
CN	8501	FFC CONNECTOR 26P	AKM1441	R	8501,8508		RST1/2SP120J
CN	8503	15P D-SUB SOCKET	AKP1214	R	8506,8510-8512		RS1/10SR75R0F
RESISTORS				R	8514		RAB4CQ473J
R	8501,8508		RST1/2SP120J	R	8515,8516		RAB4CQ101J
R	8506,8510-8512		RS1/10SR75R0F	KRP-M01			
R	8514		RAB4CQ473J	107			
R	8515,8516		RAB4CQ101J				

Service Manual



KRP-M01

ORDER NO.
ARP3508

MEDIA RECEIVER

KRP-M01

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-M01	WYSIXK5	AC 220 V to 240 V	
KRP-M01	WYSXJ5	AC 220 V to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
KRP-M01	ARP3509	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM, PCB PARTS LIST, etc.



For details, refer to "Important Check Points for good servicing".

1 2 3 4

SAFETY INFORMATION

!

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

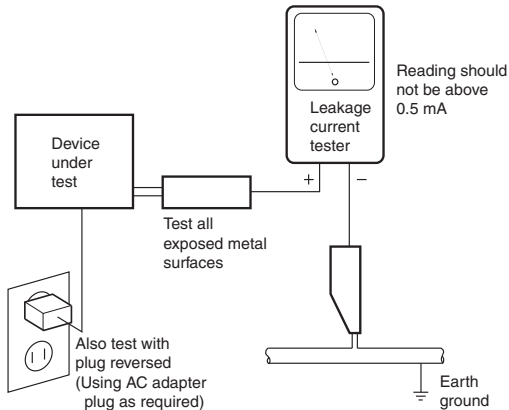
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120 V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual. The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

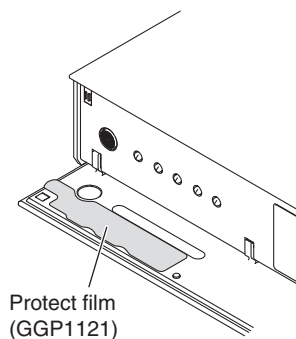
The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 NOTES SPECIFIC TO THIS PRODUCT

1. Notes before starting repair

- The high-gloss resin parts of the exterior of this product are easily scratched. During disassembly and reassembly of this product, be careful not to scratch the exterior.
- If the door of this product is pressed firmly from the front or when the KEY Assy and LED Assy are reassembled, print of the front-panel operating section may be transferred to the inside surface of the door. To avoid this, be sure to attach the protect film to the inside surface of the door before repairing. If protect film is not available, slip a cleaning cloth or the like inside the door for protection.
- Remove the attached protect film after product installation is completed. If the repaired product is to be delivered to the customer's home or a dealer, leave the protect film attached.



2. Note on Disassembly/Reassembly

1) Fixing screws for the HDMI connector and system cable connector

For tightening the screws for the HDMI connector and system cable connector, do not use an electric screwdriver. Tighten them manually. If they are tightened too forcefully with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be loosened/tightened any more.

2. SPECIFICATIONS

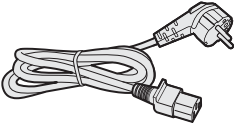
2.1 ACCESSORIES

A

• Power cable

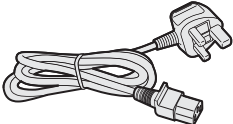
Only the power cable appropriate for your country or region is supplied:

(ADG1214)



For Europe, except UK and Republic of Ireland

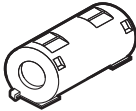
(ADG1223)




For UK and Republic of Ireland

WYSIXK5 only

• Ferrite core (ATX1039)



Ferrite core



Cable tie
(for ferrite core)

C

D

E

F

2.2 SPECIFICATIONS

Item			Media Receiver, model: KRP-M01
Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
TV Function (Analogue)	Receiving System		B/G, D/K, I, L, L'
	Tuner	VHF/UHF	E2–E69 ch, F1–F6 ch, I21–I69 ch, IR A–IR J ch
		CATV	Hyper-band, S1–S41 ch
	Auto Channel Preset		99 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		NICAM/A2
TV Function (Digital)	Receiving System		DVB-T(2K/8K COFDM)
	Tuner	VHF/UHF	VHF Band III (170 MHz to 230 MHz) and UHF Band IV, V (470 MHz to 862 MHz)
		Auto Channel Preset	999 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
TV Function (Satellite)	Receiving System		DVB-S, DVB-S2
	IF Tuner		950 MHz to 2150 MHz
	Auto Channel Preset		5000 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
Terminals	Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in ^{*1}
		INPUT 2	SCART (AV in/out, S-Video in, AV link ^{*2}), Component Video in, AUDIO in
		INPUT 3	SCART (AV in/out, S-Video in, RGB in, AV link ^{*2}), HDMI in ^{*1}
		INPUT 4	HDMI in ^{*1}
		CONTROL OUT	1
		SYSTEM CABLE	1
		Antenna	75 Ω Din Type for VHF/UHF in/SAT (Satellite) in
		AUDIO OUT	AUDIO out (Fixed)
		SUB WOOFER OUT	Variable
		DIGITAL OUT	Digital audio output (Optical)
		LAN (10/100)	1
	Front	INPUT 5	Video in, HDMI in ^{*1}
		PC INPUT	Analogue RGB
		INPUT 5/PC INPUT	Audio in
		USB	USB in ^{*3}
		PHONES	16 Ω to 32 Ω recommended
		COMMON INTERFACE	2, CA Module
		Power Requirements	220 V to 240 V AC, 50 Hz/60 Hz, 52 W (0.4 W Standby)
		Weight	4.5 kg (9.9 lbs)

*1 This conforms to HDMI 1.3 (Deep Colour) and HDCP1.1. HDMI (High-Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

*2 Switchable from menu.

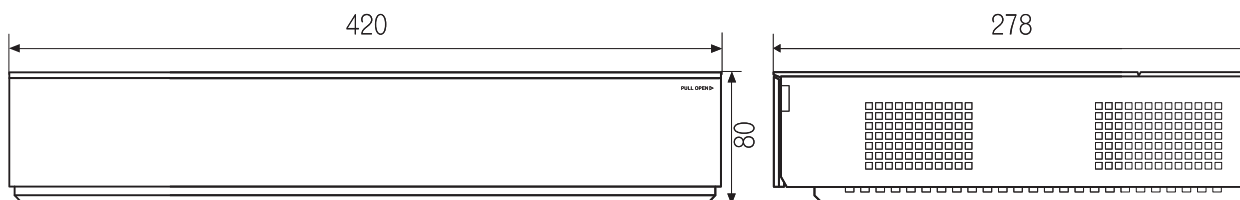
*3 This conforms to USB 1.1 and 2.0 specifications.

Design and specifications are subject to change without notice.

Dimensions (Media Receiver)

KRP-M01

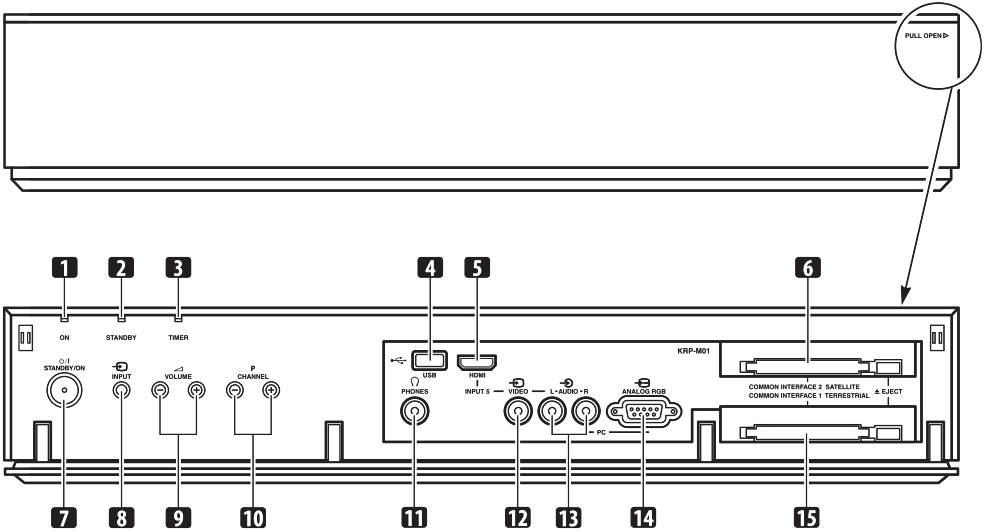
Unit: mm



KRP-M01

A

(Front)



- C

1

2

3

4

5

6

7

8

Power ON indicator

STANDBY indicator

TIMER indicator

USB port

INPUT 5 terminal (HDMI)

COMMON INTERFACE 2 SATELLITE slot

STANDBY/ON button

INPUT button
- 9

10

11

12

13

14

15

VOLUME Up/Down buttons

CHANNEL Up/Down buttons

PHONES output terminal

INPUT 5 terminal (Video)

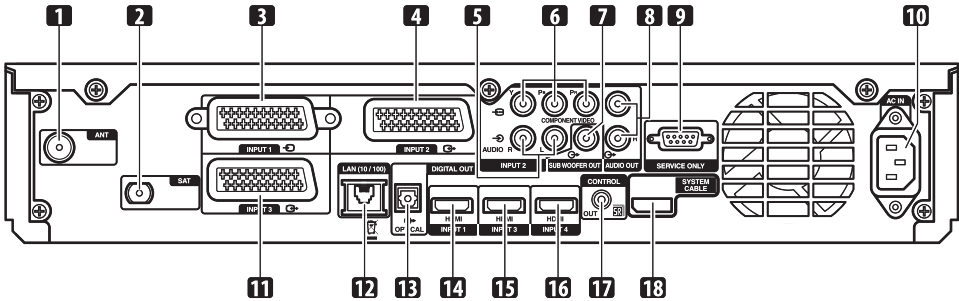
INPUT 5/PC INPUT terminals (Audio)

PC INPUT terminal (Analogue RGB)

COMMON INTERFACE 1 TERRESTRIAL slot

D

(Rear)



- E

1

2

3

4

5

6

7

8

9

ANT (Antenna) input terminal

SAT (Satellite) input terminal

INPUT 1 terminal (SCART)

INPUT 2 terminal (SCART)

INPUT 2 terminals (Audio)

INPUT 2 terminals (COMPONENT VIDEO: Y, P_B, P_R)

SUB WOOFER OUT terminal

AUDIO OUT terminals

RS-232C terminal (SERVICE ONLY)
(used for factory setup)
- 10

11

12

13

14

15

16

17

18

AC IN terminal

INPUT 3 terminal (SCART)

LAN (10/100) port

DIGITAL OUT terminal (OPTICAL)

INPUT 1 terminal (HDMI)

INPUT 3 terminal (HDMI)

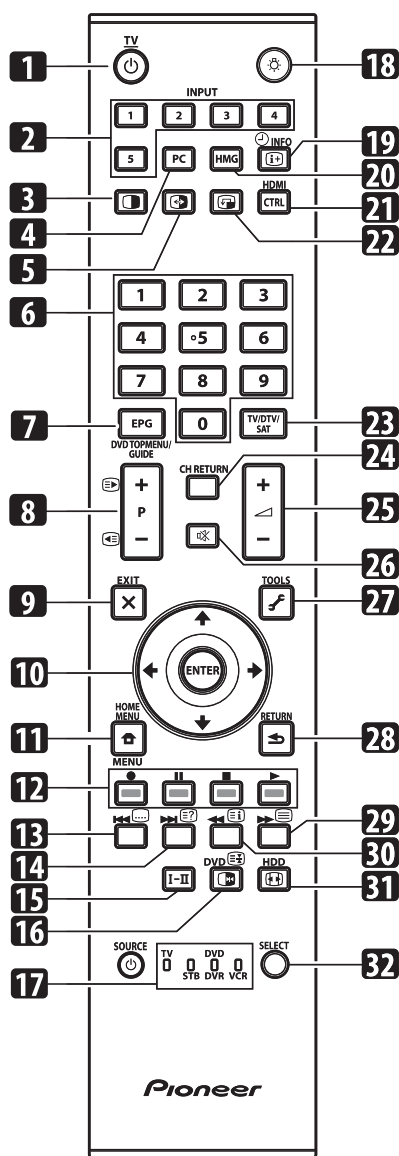
INPUT 4 terminal (HDMI)

CONTROL OUT terminal

SYSTEM CABLE terminal

Remote Control Unit

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 **TV** : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the flat screen TV. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")
- 3 **SCREEN**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 4 **PC**: Selects the PC terminal as an input source.
- 5 **PI/P**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

- 6 **0 to 9**: TV/External input mode: Selects a channel. Teletext mode: Selects a page. Turns the power on when the STANDBY indicator lights red.
- 7 **EPG**: Displays the Electronic Programme Guide in DTV/SAT (Satellite) input mode.
- 8 **P+/P-**: TV/External input mode: Selects a channel. **TELETEXT**: Teletext mode: Selects a page.
- 9 **X EXIT**: Returns to the normal screen in one step.
- 10 **UP/DOWN/LEFT/RIGHT**: Selects a desired item on the setting screen. **ENTER**: Executes a command.
- 11 **HOME MENU**: Displays the HOME MENU screen.
- 12 **Colour (RED/GREEN/YELLOW/BLUE)**: Controls a BD player for HDMI Control functions only.
- 13 **TELETEXT**: Jumps to Teletext subtitle page. Turns subtitle on and off in DTV input mode depending on the broadcast.
- 14 **TELETEXT**: Displays hidden characters.
- 15 **I-II**: Sets the sound multiplex mode.
- 16 **TV/STB**: TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function. **TELETEXT**: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 17 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 18 **Light**: Lights up buttons. Lights turn off if no operations are performed within five seconds. This is used for remote control use in dark locations.
- 19 **INFO**: Displays the channel information. Displays the banner information.
- 20 **HMG (Home Media Gallery)**: Displays the Home Media Gallery screen.
- 21 **HDMI CTRL**: Displays the HDMI Control menu.
- 22 **PI/P**: Moves the location of the small screen when in the picture-in-picture mode.
- 23 **TV/DTV/SAT**: Switches the mode among TV, DTV and SAT.
- 24 **CH RETURN**: Returns to the previous channel.
- 25 **+/-**: Sets the volume.
- 26 **MUTE**: Mutes the sound.
- 27 **TOOLS**: Displays the TOOLS Menu.
- 28 **RETURN**: Restores the previous menu screen.
- 29 **TELETEXT**: Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 30 **TELETEXT**: Displays an Index page for the CEEFAX/FLOF format. Displays a TOP Over View page for the TOP format.
- 31 **SCREEN**: Selects the screen size.
- 32 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display panel.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

A

Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

B

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

C

D

Cleaning



Name	Part No.	Remarks
Cleaning paper	GED-008	Used to fan cleaning. Refer to “9.3 BOTTOM SECTION.”

E

F

3.2 QUICK REFERENCE

Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".

② Attaching screws for the HDMI and system cable terminals

When attaching the HDMI and system cable terminals after replacing the Assembly, secure the terminals manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD		SD	
No. of LEDs flashing	MR	Panel	No. of LEDs flashing
Red 1	MR_POWER	SQ_LSI	Blue 1
	Panel	Module Device communication	Blue 2
Red 2	POWER	DIGITAL-RST2	Blue 3
Red 3	SCAN	Panel temperature	Blue 4
Red 4	SCN-5V	Audio	Blue 5
Red 6	Y-DCDC	Module microcomputer communication	Blue 6
Red 7	Y-SUS		Blue 7
Red 8	ADRS		Blue 8
Red 10	X-DCDC	Panel main IIC communication	Blue 9
Red 11	X-SUS		Blue 10
Red 12	DIG-DCDC	FAN	Blue 11
Red 15	UNKNOWN	Unit high temperature	Blue 12
			Blue 13
		DC-IN	Blue 14
		Panel main EEPROM	Blue 15

Special LED Patterns		Subcategory confirmation procedure	
Panel	MR		
PD (2-15)	PD (1)	If the DISPLAY key is pressed during shutdown, the orange LED flashes. (MR only)	
SD (1-15)	SD (7-15)		
System failure	Standalone operation (MRMS01)	SD	SD Subcategory
MR on standby (Red LED lit)	Rewriting of software (PC)	8	1 Tuner 1
Rewriting of software (PC)	Rewriting of software (USB)		2 MSP/MAP
NO	After rewriting is completed successfully, the orange LED goes dark.		3 AV Switch
BACKUP	Rewriting of software failed (USB)		4 RGB Switch
For special patterns other than described here, see 5.1[1].		13	5 Main VDEC
			6 VDEC-SDRAM
			7 AD/PLL
			8 HDMI
		2	9 Display Port Tx
			1 RST2
			2 RST4

Commands for shifting between standalone and system operations	
Panel	MR
To Standalone operation: SYSS00	To Standalone operation: MRMS01
To System operation: SYSS01	To System operation: MRMS00

Note: After issuing a command, unplug then again plug in the AC power cord.

Other SD main categories have subcategories. For details, see 5.4[2].

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] two times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)

② MR section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] two times.)

③ Panel main section

Select {PANEL MAIN FACTORY} then {PM NG INFO}.
After entering Factory mode, press [MUTING] twice, then press [ENTER/SET].

3. How to display the Mask indication

① Mask indication in the panel side

- Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
- Press [ENTER/SET], then select a Mask indication, using [↑] or [↓].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. DIGITAL Assy (Panel): Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
- Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN BLOCK Assy (MR), MAIN Assy (Panel): Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
- Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit (Panel): Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

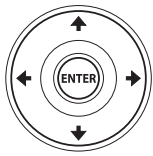
4. Other Assys (Panel): Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Up
↓
Down

- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [↑] or [↓].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER/SET]. To return to the next nested layer above, also press [ENTER/SET].

INFORMATION mode

1. VERSION (1)
2. VERSION (2)
3. VERSION (3)
4. MAIN NG
5. TEMPERATURE
6. HOUR METER
7. HDMI SIGNAL INFO 1
8. HDMI SIGNAL INFO 2
9. VDEC SIGNAL INFO 1
10. VDEC SIGNAL INFO 2



INITIALIZE mode

1. SIDE MASK LEVEL
2. FINAL SETUP
3. DTB SERVICE MENU
4. Wide XGA AUTO
5. AUTO ADJUSTMENT



OPTION mode

1. CH PRESET
2. Digital AFT
3. SYNC DET
4. CTI



PANEL MAIN FACTORY mode

1. PM NG INFO
2. PM STATE INFO.
3. DP_RX INFO.
4. PM_SETUP



PANEL FACTORY mode

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL FUNCTION
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP

Structure of Layers in Service Factory Mode

INFORMATION mode

- 1. VERSION (1)
- 2. VERSION (2)
- 3. VERSION (3)
- 4. MAIN NG
 - 4-1. CLEAR
- 5. TEMPERATURE
- 6. HOUR METER
- 7. HDMI SIGNAL INFO 1
- 8. HDMI SIGNAL INFO 2
- 9. VDEC SIGNAL INFO 1
- 10. VDEC SIGNAL INFO 2

The software versions for each microcomputer
The Flash memory versions for each device
The software versions for display microcomputer
The shutdown message ID/event times
(Going Clear mode by [ENTER/SET] key)
Select Yes by [→] key → pushing and hold [ENTER/SET] key
The temperature/FAN rotating status
The HOUR METER/P-COUNT information
The information of HDMI information files
The information of HDMI information files
The signal information of VDEC
The signal information of VDEC

PANEL FACTORY mode

Refer to [PANEL FACTORY MODE]

PANEL MAIN FACTORY mode

- 1. PM NG INFO.
- 2. PM STATE INFO.
- 3. DP_RX INFO.
- 4. PM_SETUP

Shutdown history of the panel main
The temperature/FAN rotating status/Room Light Sensor
Indication of the DPRx ID
Select the bezel color and clear the shutdown history of the panel main

OPTION mode

- 1. CH PRESET
- 2. Digital AFT
- 3. SYNC DET
- 4. CTI

For production line use
For production line use
For technical analysis
For technical analysis

INITIALIZE mode

- 1. SIDE MASK LEVEL
 - 1-1. SIDE MASK LEVEL
- 2. FINAL SETUP
 - 2-1. DATA RESET
- 3. DTB SERVICE MODE
 - 3-1. MODE SHIFT
- 4. Wide XGA AUTO
- 5. AUTO ADJUSTMENT

For factory use
Set to Factory default settings (it should perform after replacing a MAIN Assy)
Information for the Digital Tuner Service Menu is displayed
For technical analysis

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ (+)
 1. VOL SUS
 2. VOL OFFSET
 -
10. RESET1ST_KSB
 -
25. SUS FREQ
6. PANEL-2 ADJ (+)
 1. R-HIGH
 2. G-HIGH
 -
 6. B-LOW
 7. ABL
7. PANEL FUNCTION (+)
 1. R-LEVEL
 -

Version indication of the panel
Indications of the accumulated power-on time and power-on count of the panel
Indication of the Power-down history
Indication of the Shutdown history

Settings required after replacement of the panel

Items for factory use

For AM noise prevention (Depending on the mode, brightness of the screen changes.)
For confirmation of the result of the setting change, the unit must be turned off then back on again.

For the WB adjustment of the panel and ABL adjustment.
A setting table is available for each signal frequency.

Items for factory use

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

8. ETC (+)
 1. BACKUP DATA
 2. DIGITAL EEPROM
 3. PD INFO.
 4. SD INFO.
 5. HR-MTR INFO.
 6. PM/B1-B5
 7. P COUNT INFO.
 8. MAX TEMP.
 9. MIRROR
 10. CLS
9. RASTER MASK SETUP (+)
 1. MASK OFF
 2. RST MASK 01
 -
10. PATTERN MASK SETUP (+)
 1. MASK OFF
 2. PTN MASK 01
 -
11. COMBI MASK SETUP (+)
 1. MASK OFF
 2. CMB MASK 01
 -

For transferring backup data (after replacement of the DIGITAL Assy)
Change the adjustment status of the DIGITAL Assy.

For clearance of data for the corresponding items.
The clearing method is the same: Select "CLEAR", then hold [ENTER/SET] pressed for at least 5 seconds.

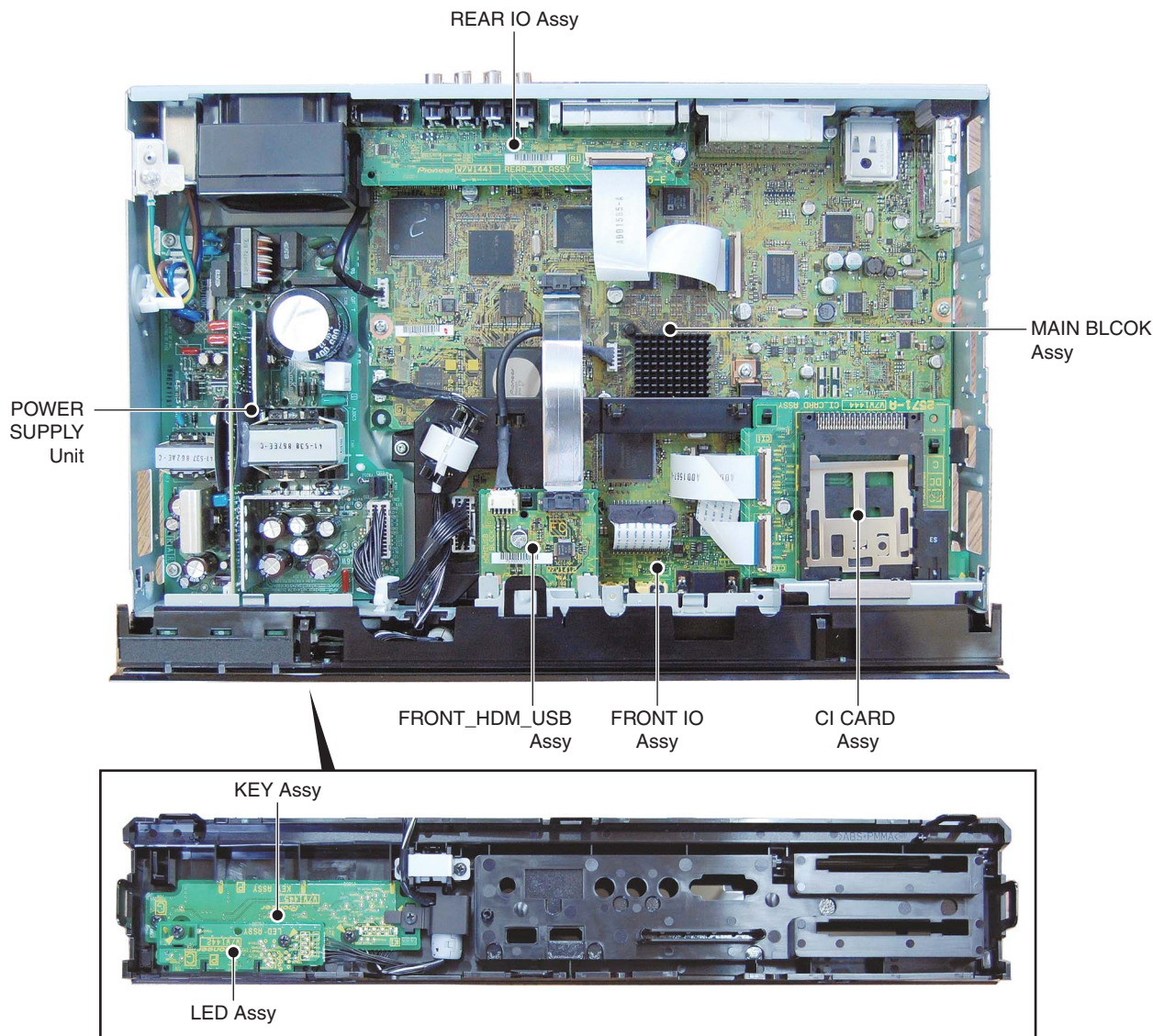
Switch the Mirror display mode.
Switch the function when checking the color sensor level.

For use while the Raster Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Pattern Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Combination Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.



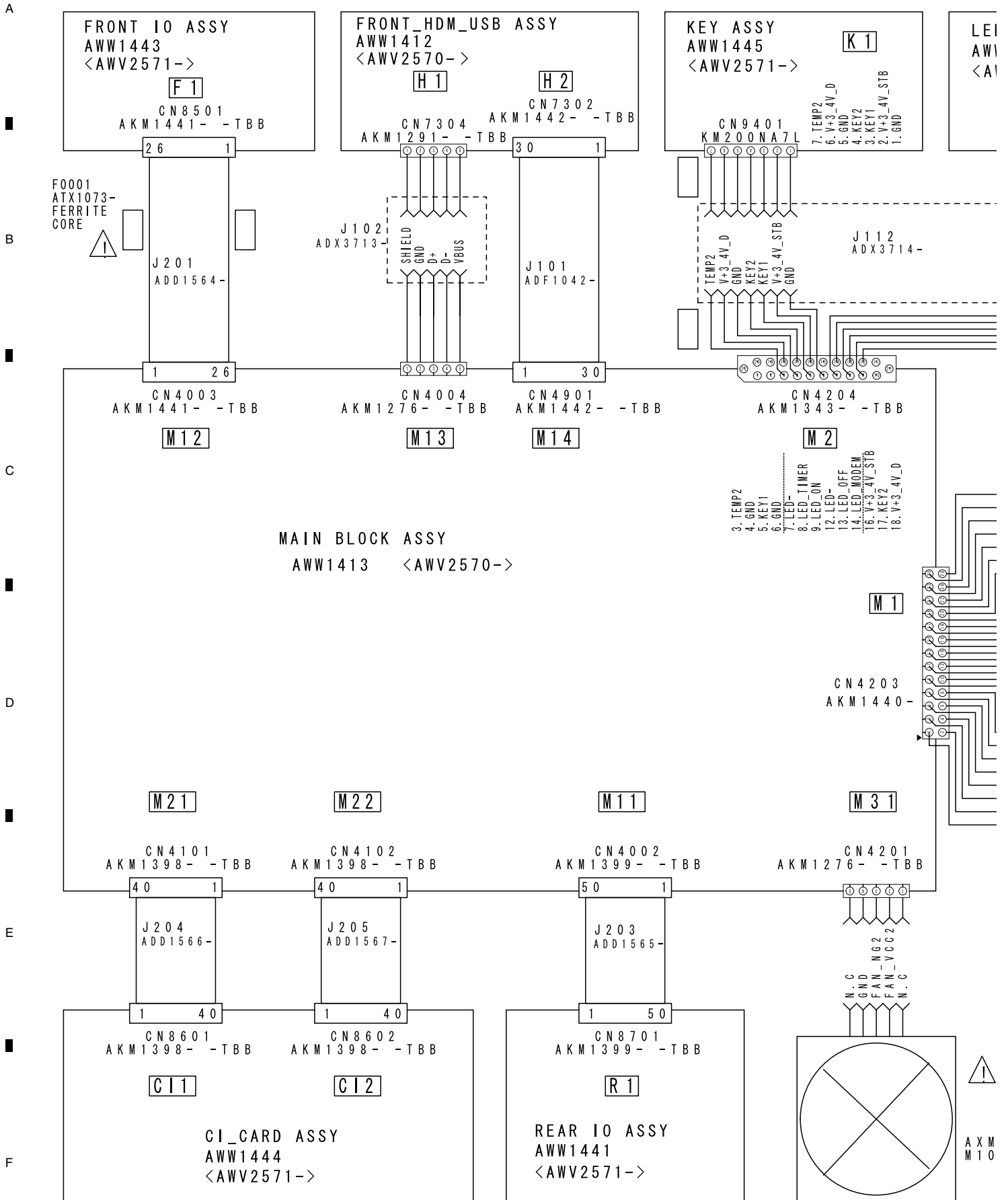
NOTES:

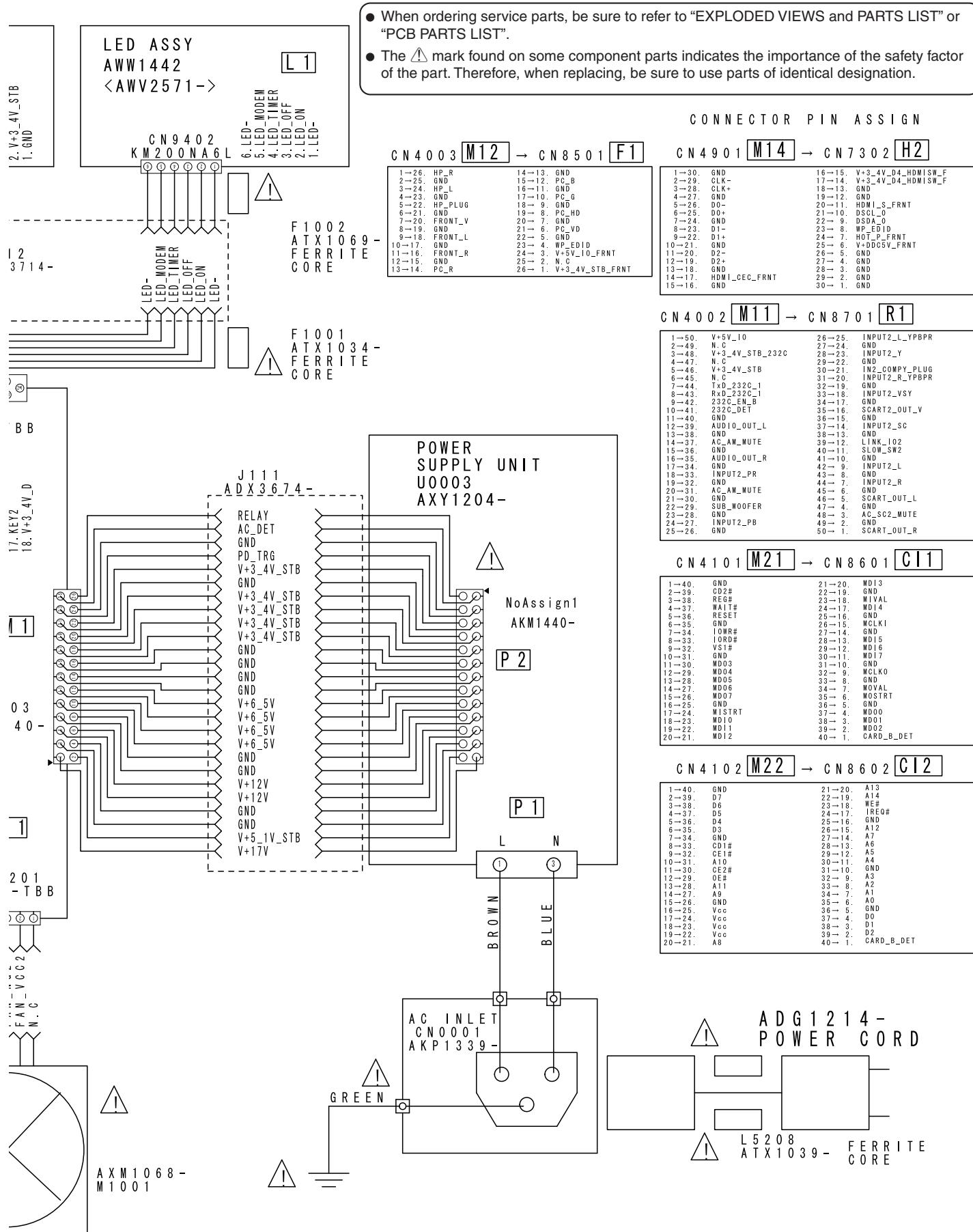
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES							
NSP	1..	MAIN ASSY	AWV2570	NSP	1..	FUKUGO ASSY	AWV2571
	2..	FRONT_HDM_USB ASSY	AWW1412		2..	REAR IO ASSY	AWW1441
	2..	MAIN BLOCK ASSY	AWW1413		2..	LED ASSY	AWW1442
					2..	FRONT IO ASSY	AWW1443
					2..	CI CARD ASSY	AWW1444
					2..	KEY ASSY	AWW1445
				⚠	1..	POWER SUPPLY UNIT	AXY1204

4. BLOCK DIAGRAM

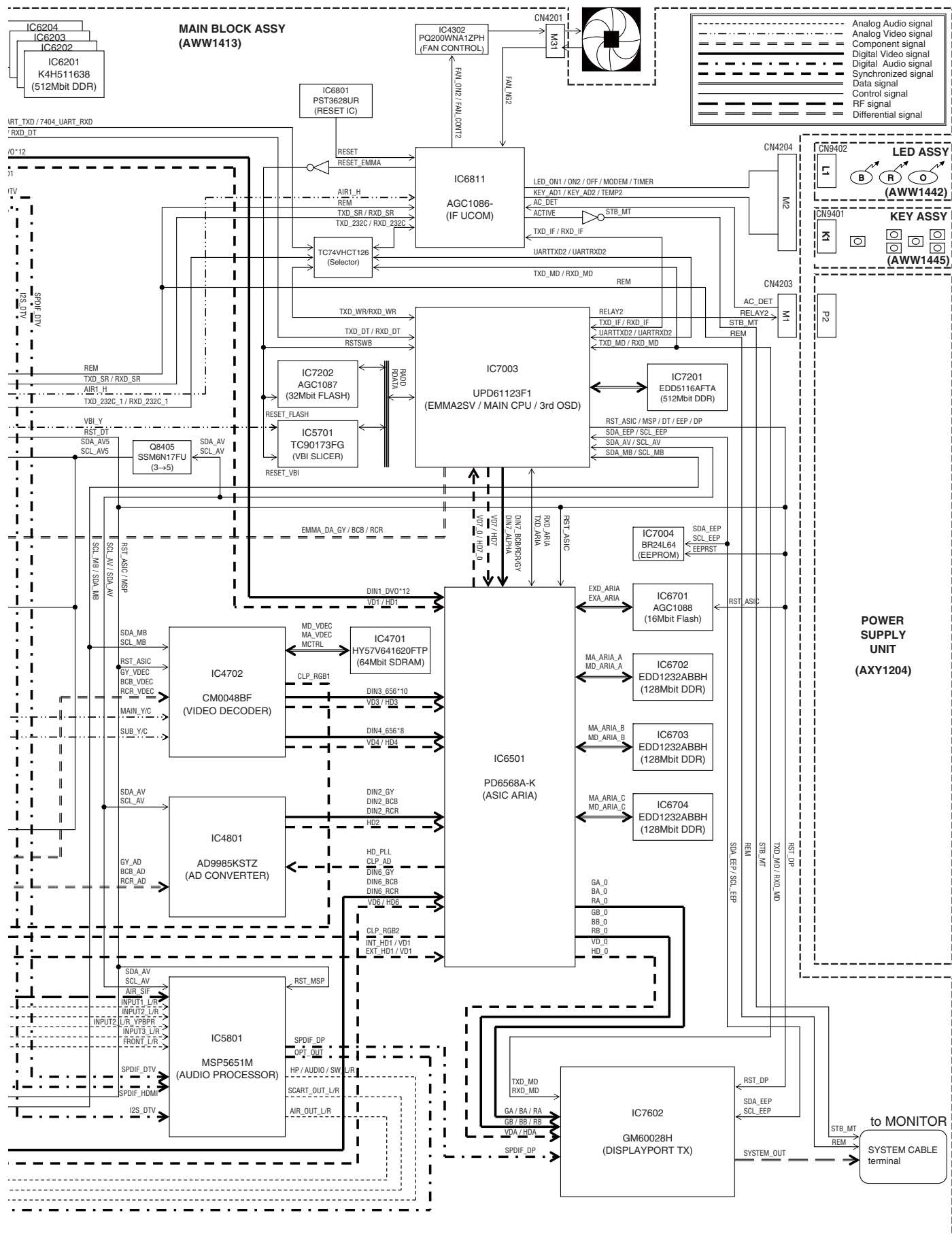
4.1 OVERALL WIRING DIAGRAM





16





OVERALL DIAGRAM
KRP-M01

A

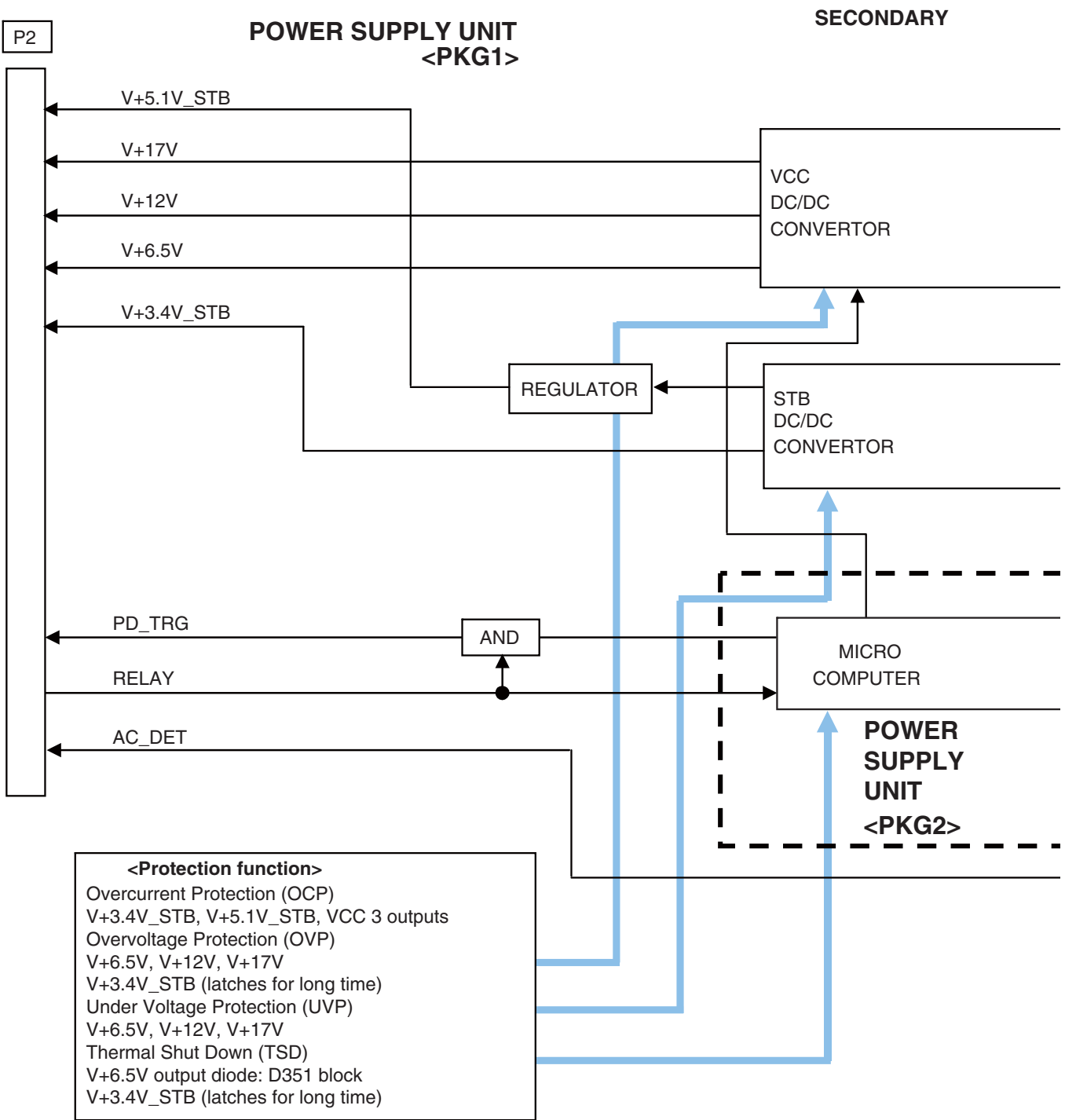
B

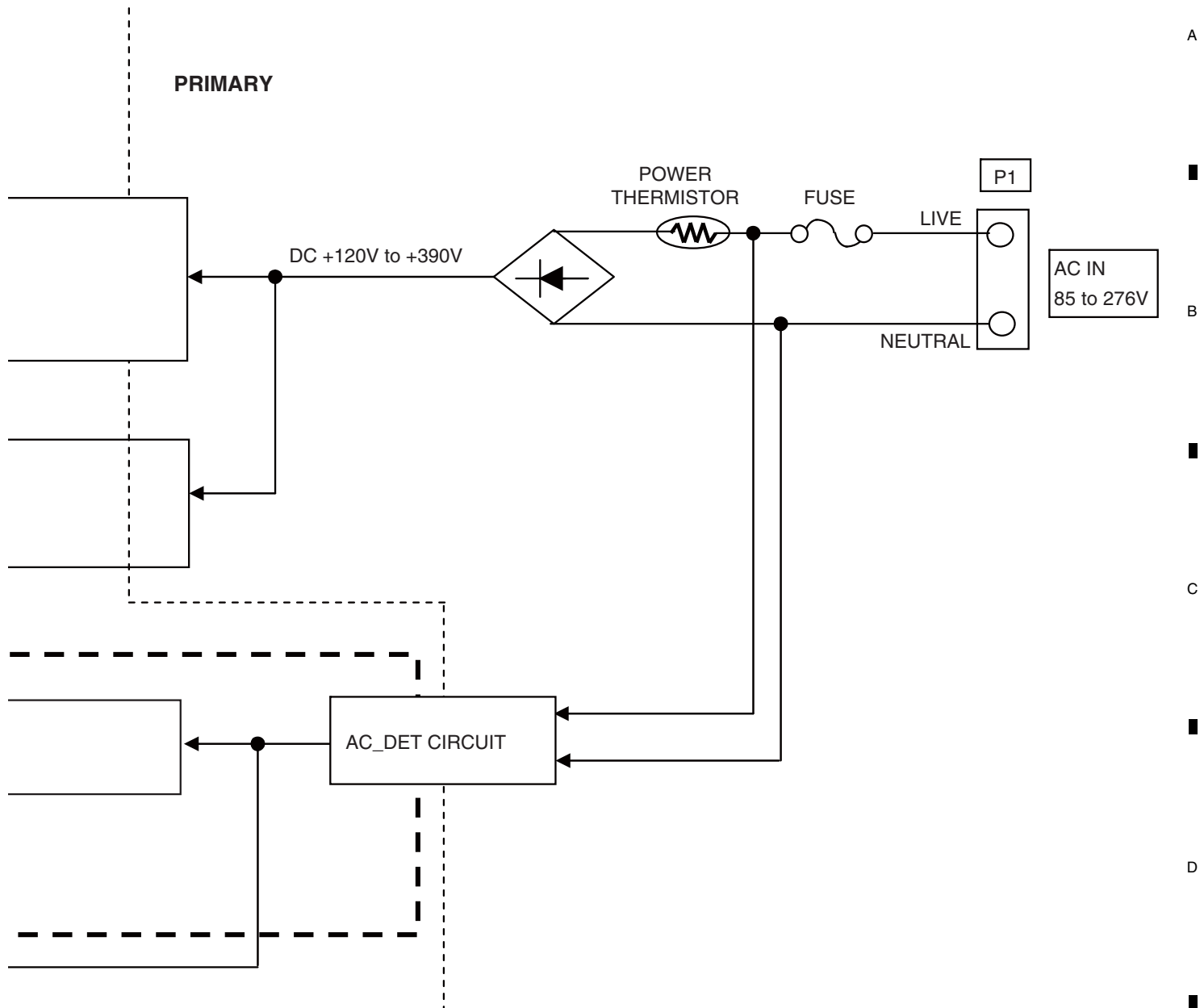
C

D

E

F





Logic Signal Specifications

[Logic level] H: STB3.4 V × (0.8 to 1.1), L: ≤ STB3.4 V × 0.2

Signal Name	I/O	Function	Logic		Description
RELAY	IN	Relay ON/OFF	H	ON	For controlling ON/OFF of all output signals other than STB signals
			L	OFF	
			Open	OFF	
PD_TRG	OUT	Determination of abnormality inside the POWER SUPPLY Unit	H	Determination of abnormality	For sending a deterministic signal when an abnormality is generated inside the POWER SUPPLY Unit to shut off any output signals other than STB signals
			L	Normal	
AC_DET	OUT	AC detection	H	Present	For detecting the presence of the AC input voltage, regardless of ON/OFF of STB 3.4 V output
			L	Absent	

4.4 POWER SUPPLY BLOCK of MAIN BLOCK ASSY

A

B

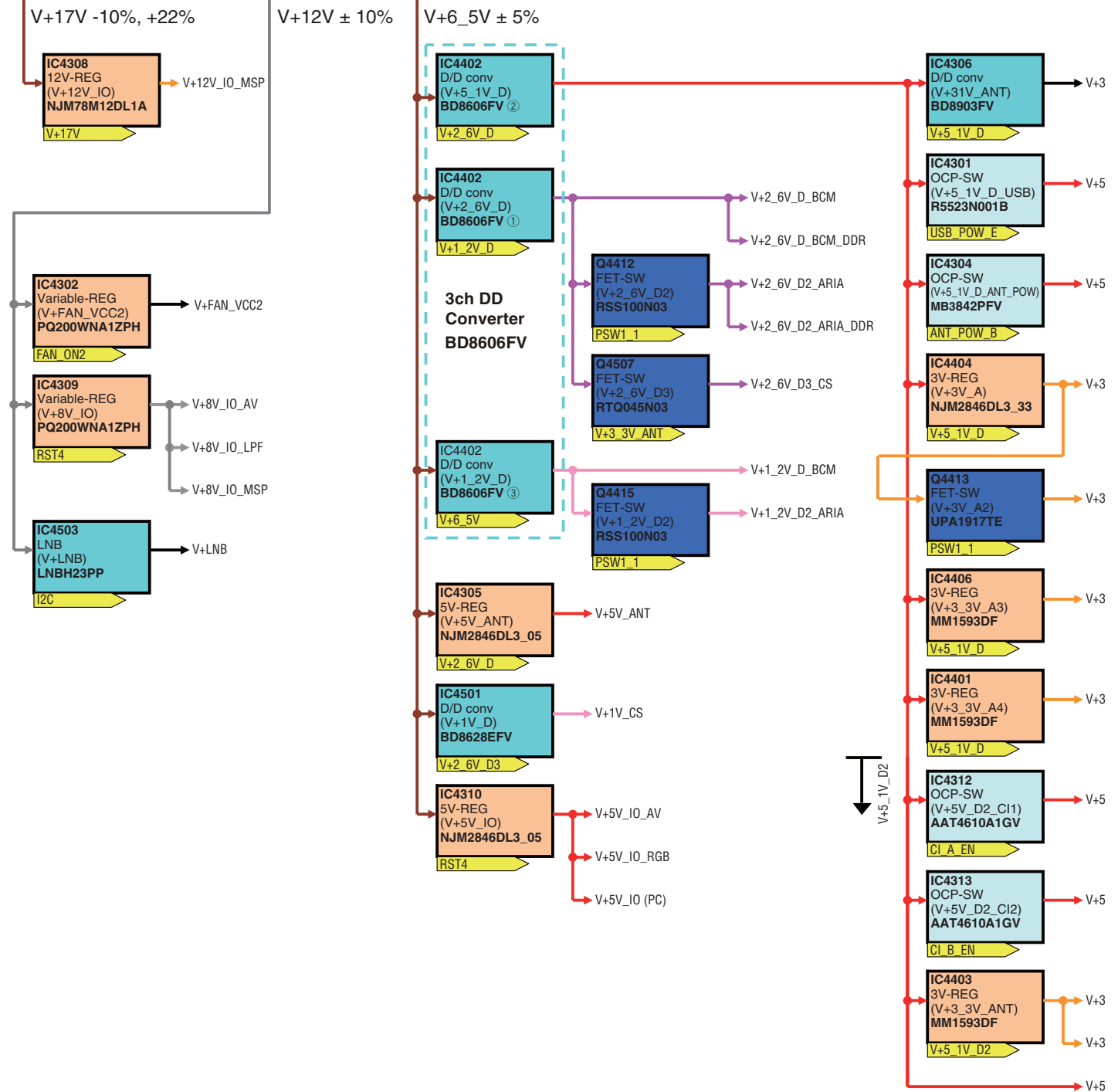
C

D

E

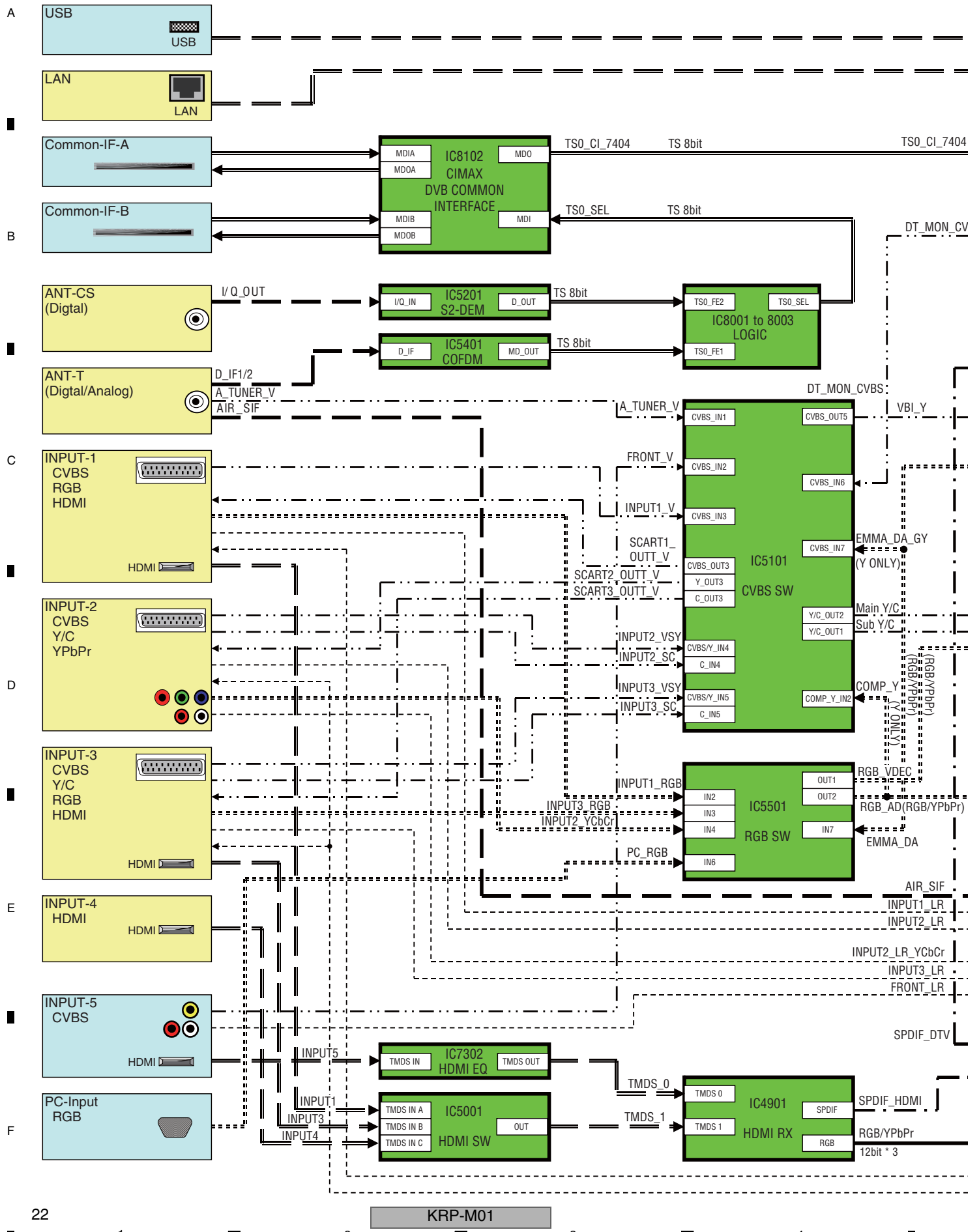
F

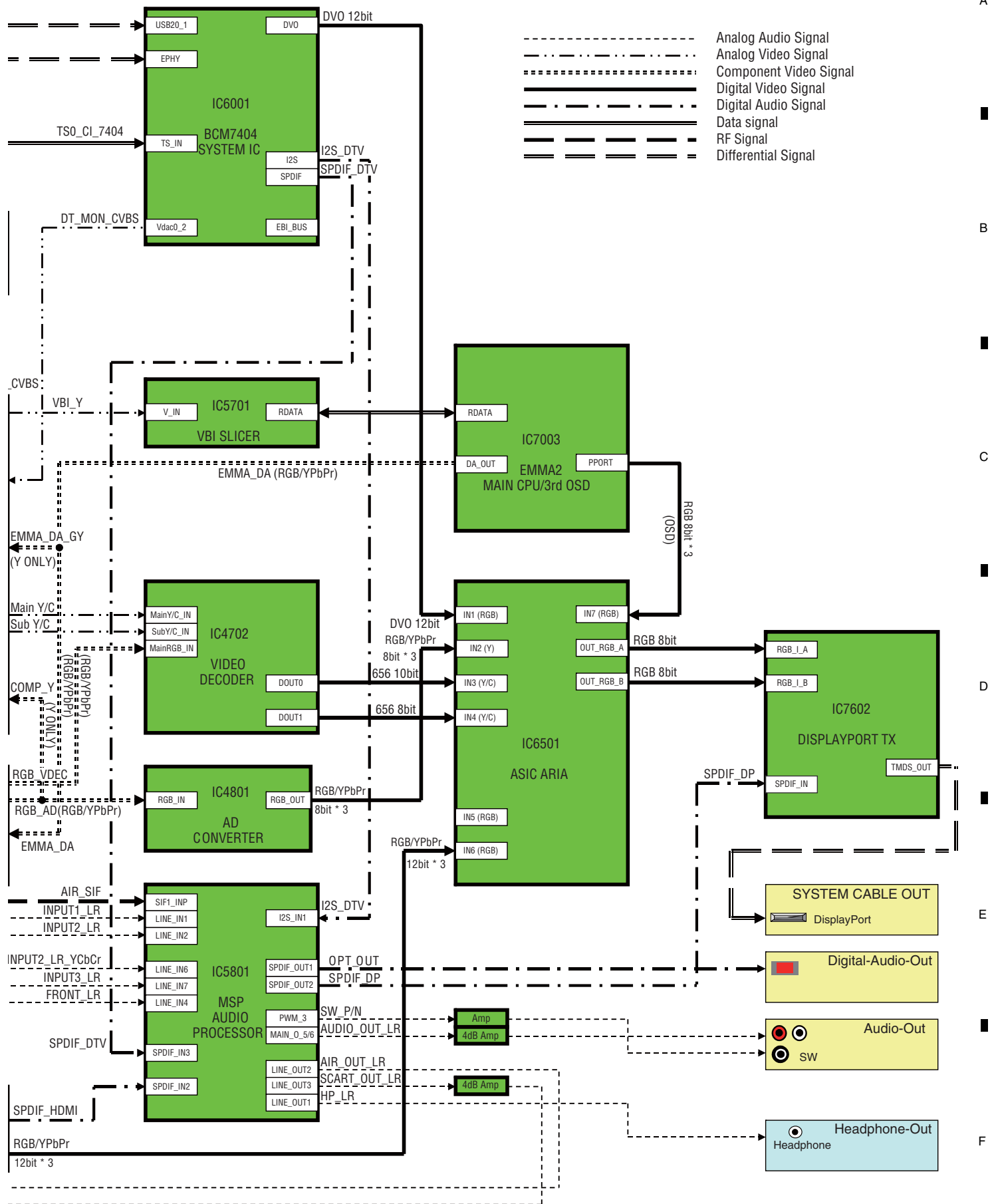
SW REG CONTROLLED BY RELAY





4.5 AV BLOCK





A

[1] LED DISPLAY INFORMATION

LED Pattern

Status	LED	LED Pattern / Remarks			
Standby Power Management	Blue Red Orange				
Power On	Blue Red Orange				
Power-Down	Blue Red Orange	Once 500ms	Twice	n times 2.5s	Once *1
Shutdown	Blue Red Orange	500ms Once	Twice	n times 2.5s	Once *2
Shutdown (Subcategory flashing)	Blue Red Orange	500ms Once 500ms	Twice	n times 2.5s	Once *2 *3
No digital adjustment data copied for backup	Blue Red Orange	200ms			
Updating the PC	Blue Red Orange	100ms 100ms			
During factory operation	Blue Red Orange				
During DTB communication inhibit	Blue Red Orange	100ms			
During USB update	Blue Red Orange	100ms 100ms			
Updating of USB is finished normally.	Blue Red Orange	100ms 100ms			
Updating of USB is abnormally finished.	Blue Red Orange	100ms 100ms 500ms	Once Twice	500ms n times 2.5s	500ms *4
Power ON of standalone mode (Screen ON)	Blue Red Orange	1000msec 1000msec 1000msec			
Mode switch of system / standalone operation	Blue Red Orange	200ms			
Sleep timer	Blue Red Orange				
During reservation video recording (Unit: Standby)	Blue Red Orange				
During reservation video recording (Unit: ON)	Blue Red Orange				



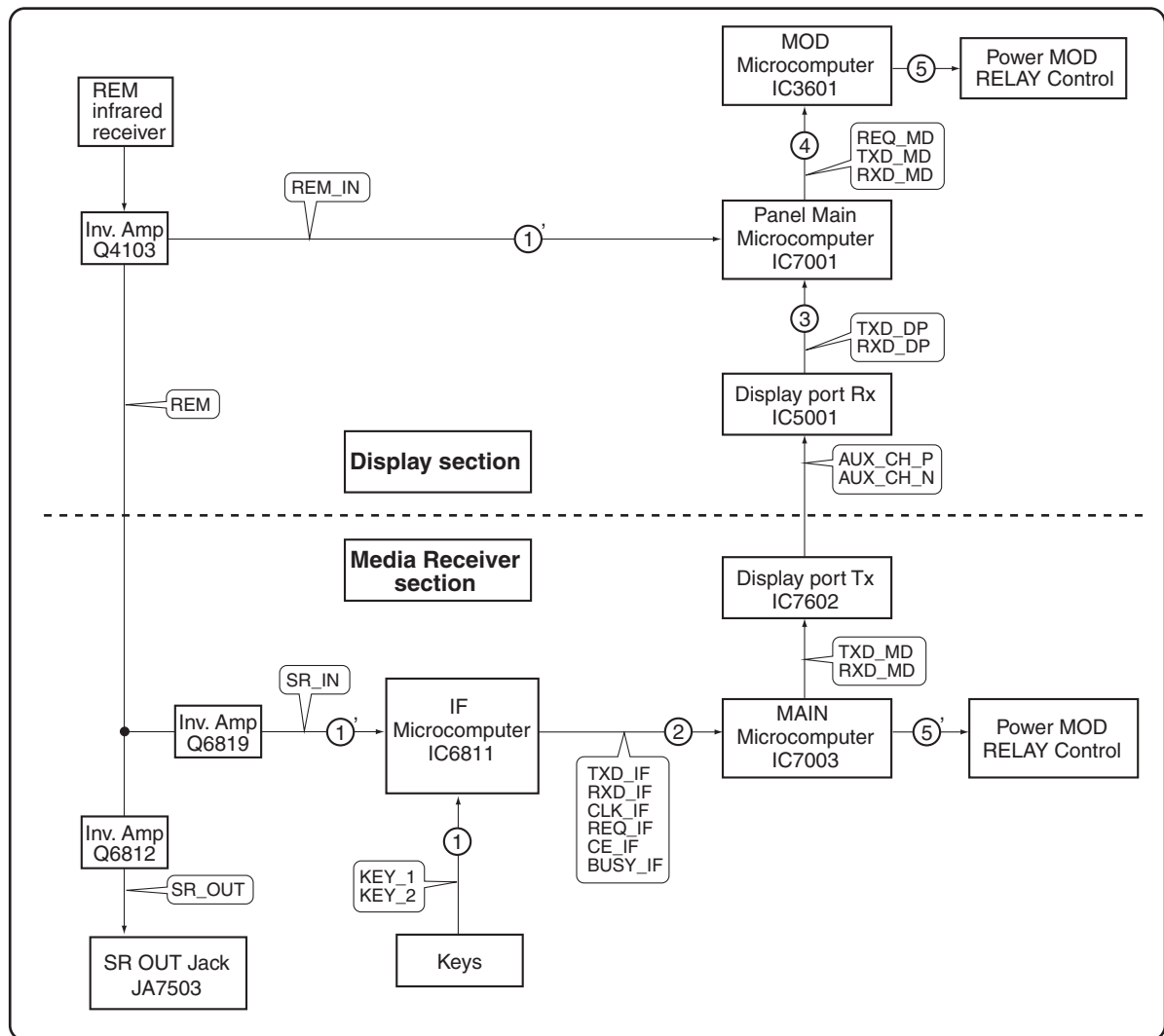
*1: Notify upon the power-down content by Red LED flashing number of times.

*2: Notify upon the shutdown content by Blue LED flashing number of times

*3: Notify upon the subcategory number by Orange LED flashing number of times.

*4: Notify upon the abnormal state by Orange LED flashing number of times.

[2] POWER ON SEQUENCE



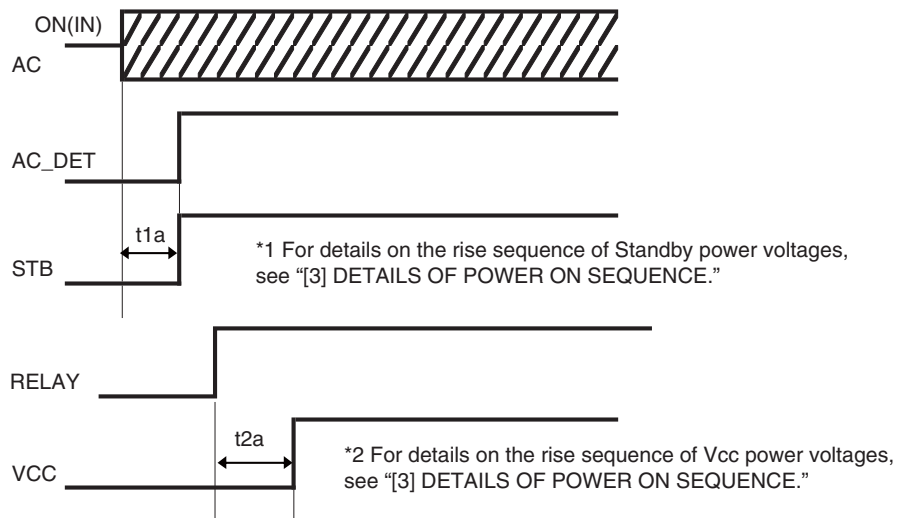
- ① : The KEY signal is input to the IF microcomputer.
- ①' : The remote control signal is input to the IF microcomputer and Panel main microcomputer.
- ② : The IF microcomputer sends the operation data of the remote control unit key to the main microcomputer.
- ③ : The main microcomputer issues a startup command (PON) to the panel main microcomputer through DP Tx and DP Rx.
- ④ : The panel main microcomputer issues a startup command (PON) to the MOD microcomputer.
- ⑤ : The MOD microcomputer controls a MOD relay of the POWER SUPPLY Unit (Display section), then the power is turned on.
- ⑤' : The main microcomputer controls a MOD relay of the POWER SUPPLY Unit (Media Receiver section), then the power is turned on.

A

■ OUTLINE OF POWER ON SEQUENCE

The rise of the output voltage is defined as the point at which 10% output voltage is reached, and the fall is defined as the output supply stop point.

■ Sequence of AC ON (IN)



(a) Relay signal: When the POWER key on the remote control unit is pressed after that on the unit is set to ON

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
RELAY to VCC	$t2a \leq 0.5s$

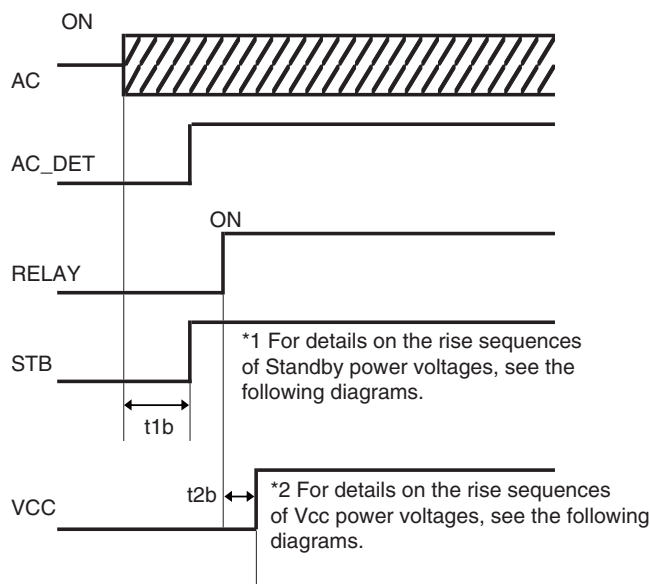
(b) Relay signal: When the POWER key on the remote control unit is pressed while the unit is OFF (in Standby mode)

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
Relay to VCC	t2a No specification

[3] DETAILS OF POWER ON SEQUENCE

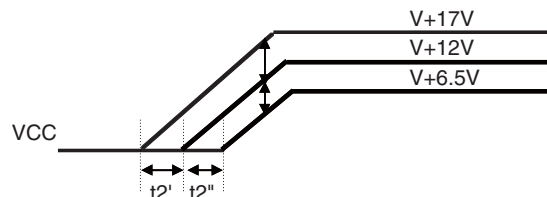
The rise of the output voltage is defined as the point at which 10% output voltage is reached.

1. Sequence of Relay ON (IN)



Relay ON	
Item	Specified Time
AC to STB	$t1b \leq 0.8s$
RELAY to VCC	$t2b \leq 0.5s$

3. Rise sequences of Vcc power voltages



<Specified time of voltages>

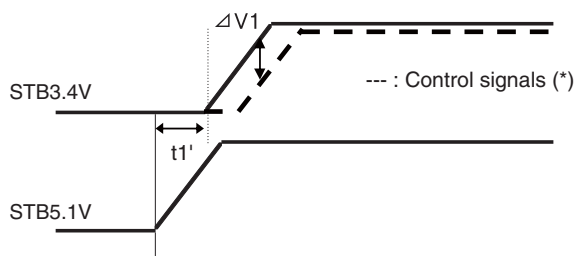
Rise	
Item	Specified time (at nominal load)
V+17V to V+12V	$0ms \leq t2' \leq 10ms$
V+12V to V+6.5V	$0ms \leq t2'' \leq 10ms$

4. Specifications of the rise time of the output voltages (common to all sequences)

Note that there must not be any temporary voltage drop during rising.

Rise time (time required for reaching from 10% to 90% output voltage)	
Item	Specified time
STB 10% to STB 90%	$tr_STB \leq 100ms$
VCC 10% to VCC 90%	$tr_VCC \leq 200ms$

2. Rise sequence of Standby power voltages



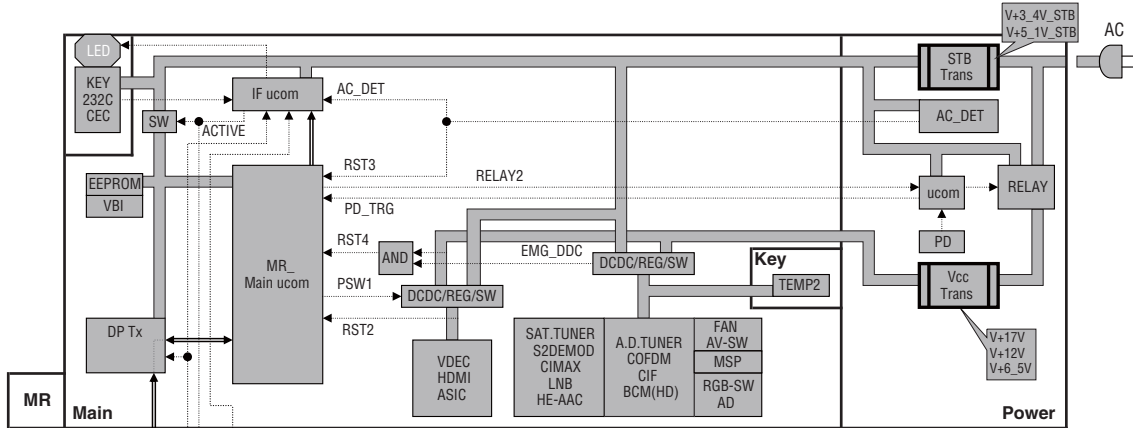
<Specified time and difference of voltages>

Rise	
Item	Specified Time
STB5.1V to STB3.4V	$-50ms \leq t1' \leq 50ms$
Item	Specified difference of voltages
STB3.4V - Control signal (*)	$0V \leq \Delta V1$

(*) Control signals (output signals) denote AC_DET and PD_TRG signals.

A DETAILS OF POWER ON SEQUENCE

AC-OFF



(MR) Output port setting

IF: ACTIVE	OFF
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

All devices are not electrified.

(Panel) Output port setting

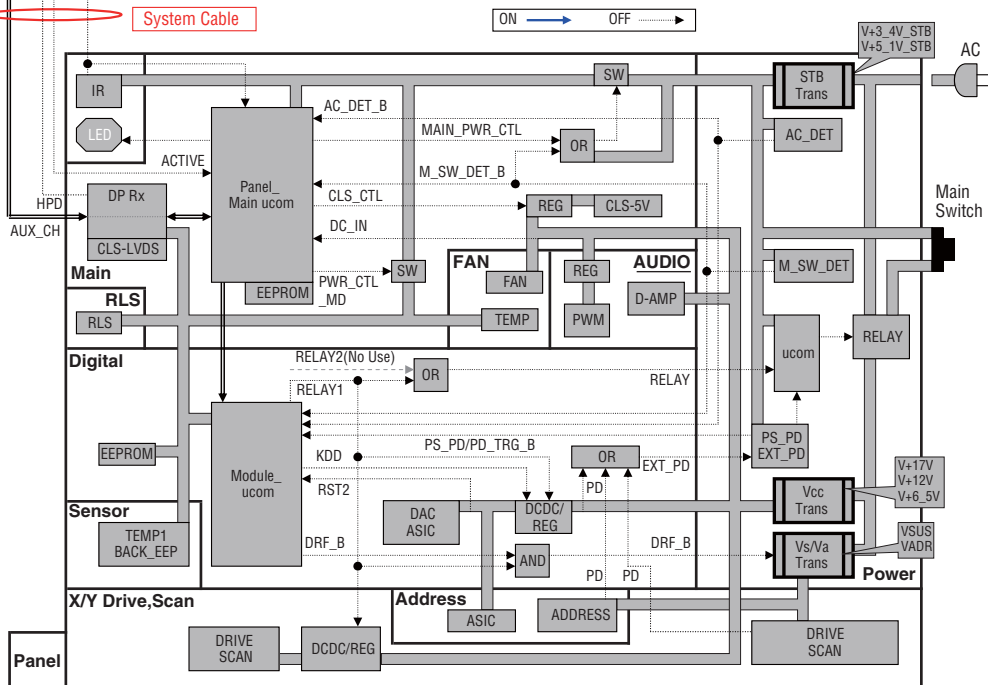
Panel Main: MAIN_PWR_CTL	OFF
Panel Main: PWR_CTL_MD	OFF
Panel Main: CLS_CTL	OFF
DP Rx: HPD	OFF
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

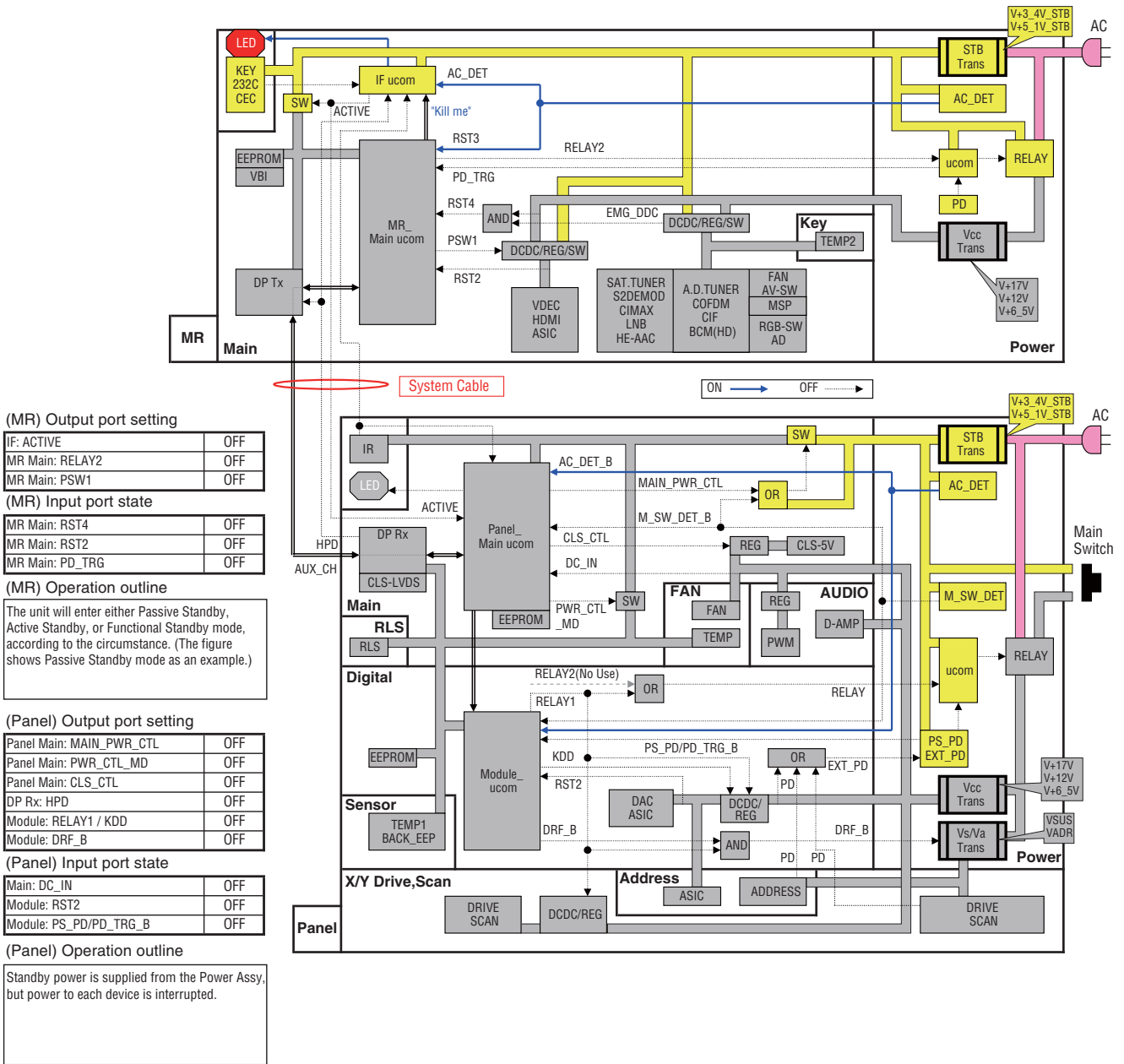
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

(Panel) Operation outline

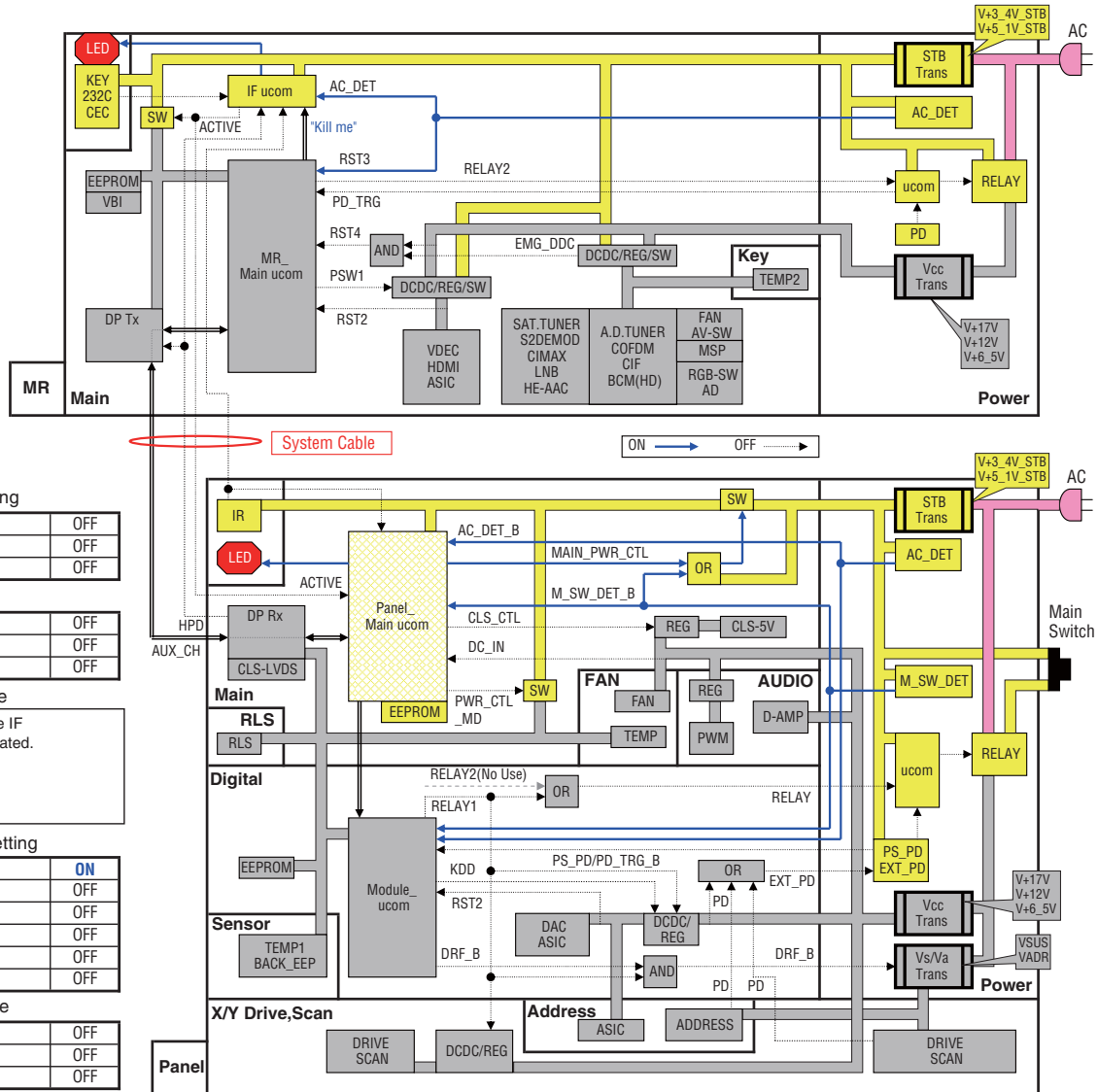
All devices are not electrified.



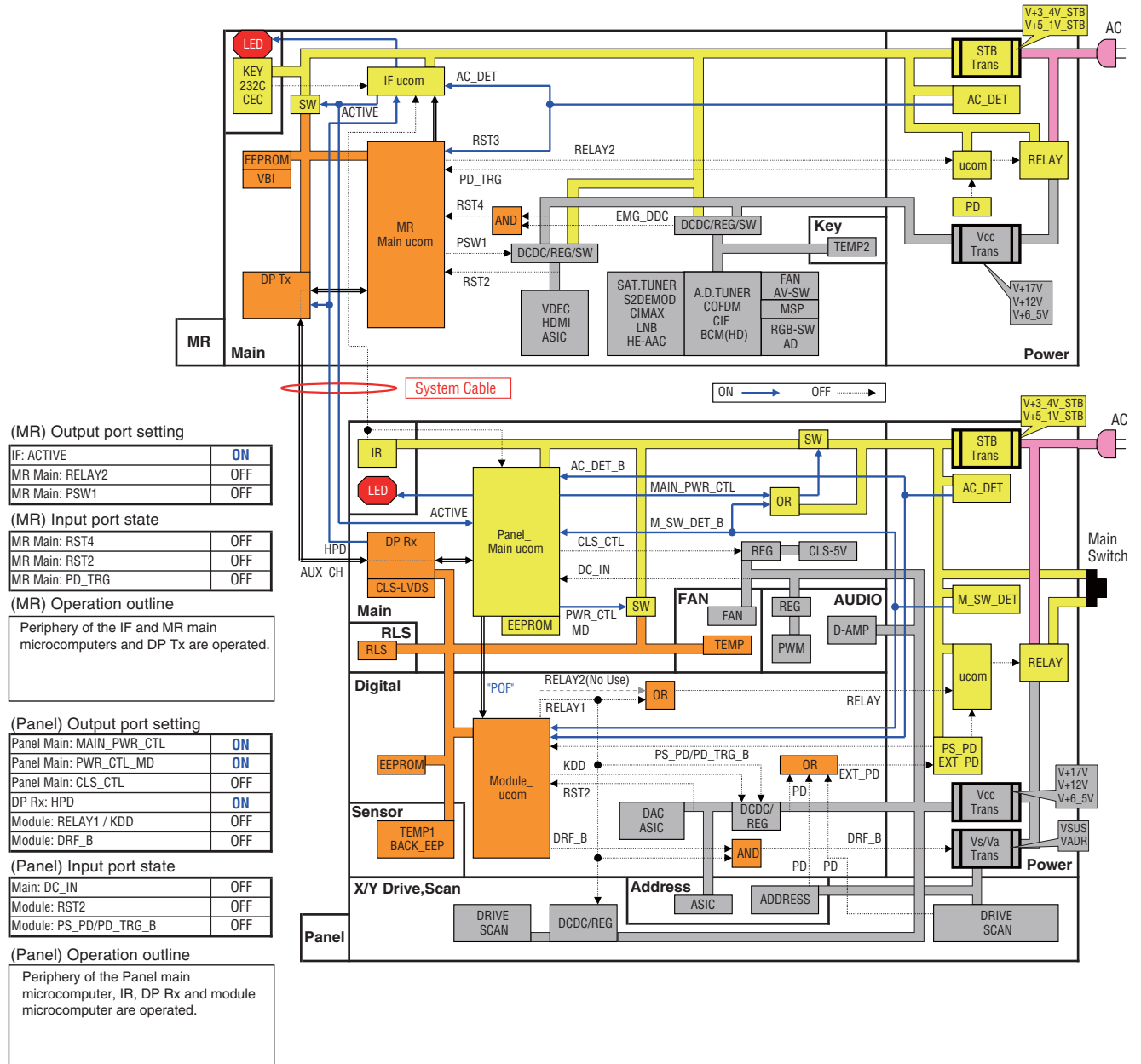
Panel Main Power OFF



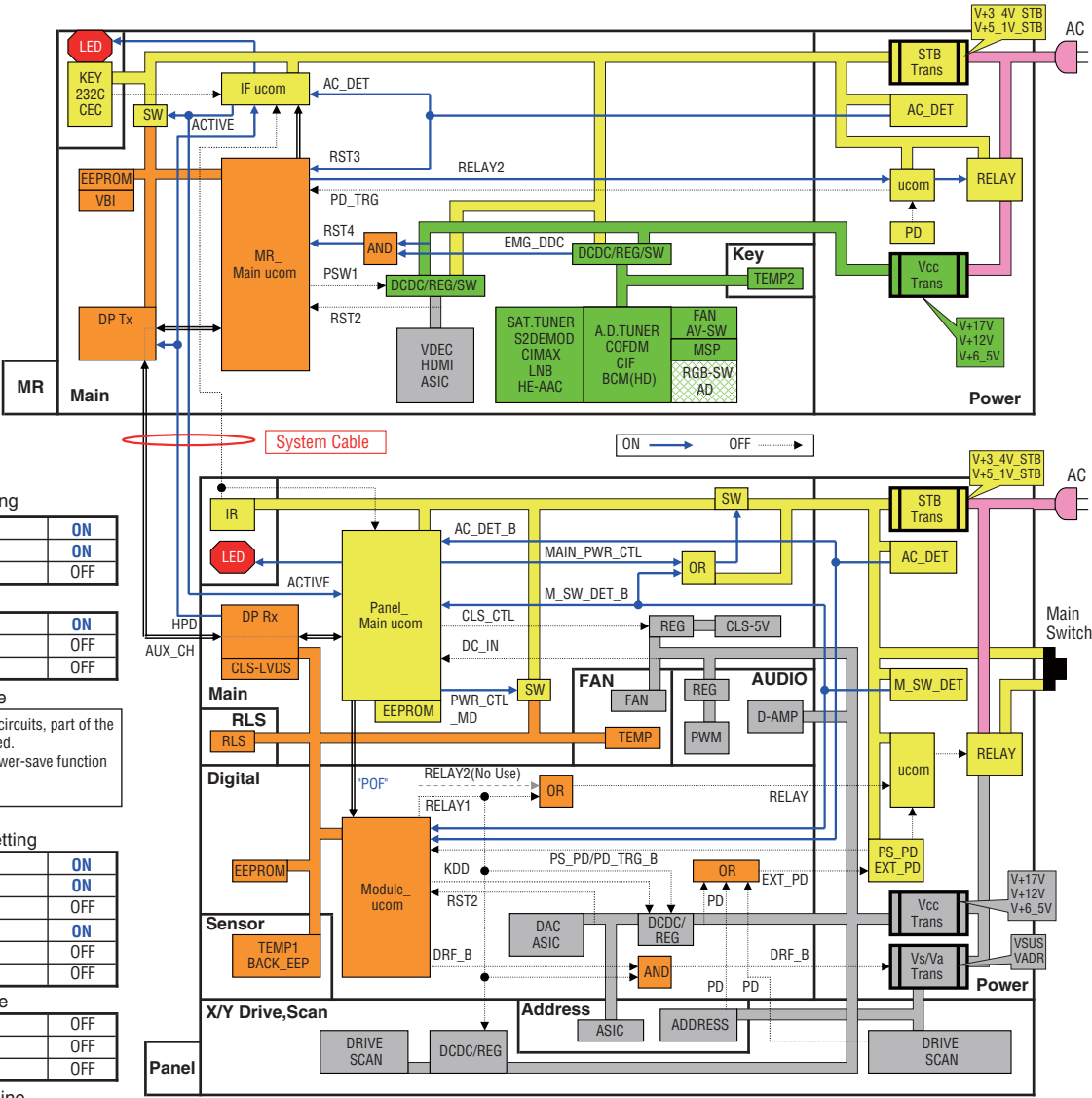
Passive Standby



Active Standby



Function Standby



(MR) Output port setting

IF: ACTIVE	ON
MR Main: RELAY2	ON
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	ON
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

- (MR) Operation outline
- Besides the standby power circuits, part of the Vcc circuits are also activated.
 - RGB-SW/AD IC uses the power-save function of the IC.

(Panel) Output port setting

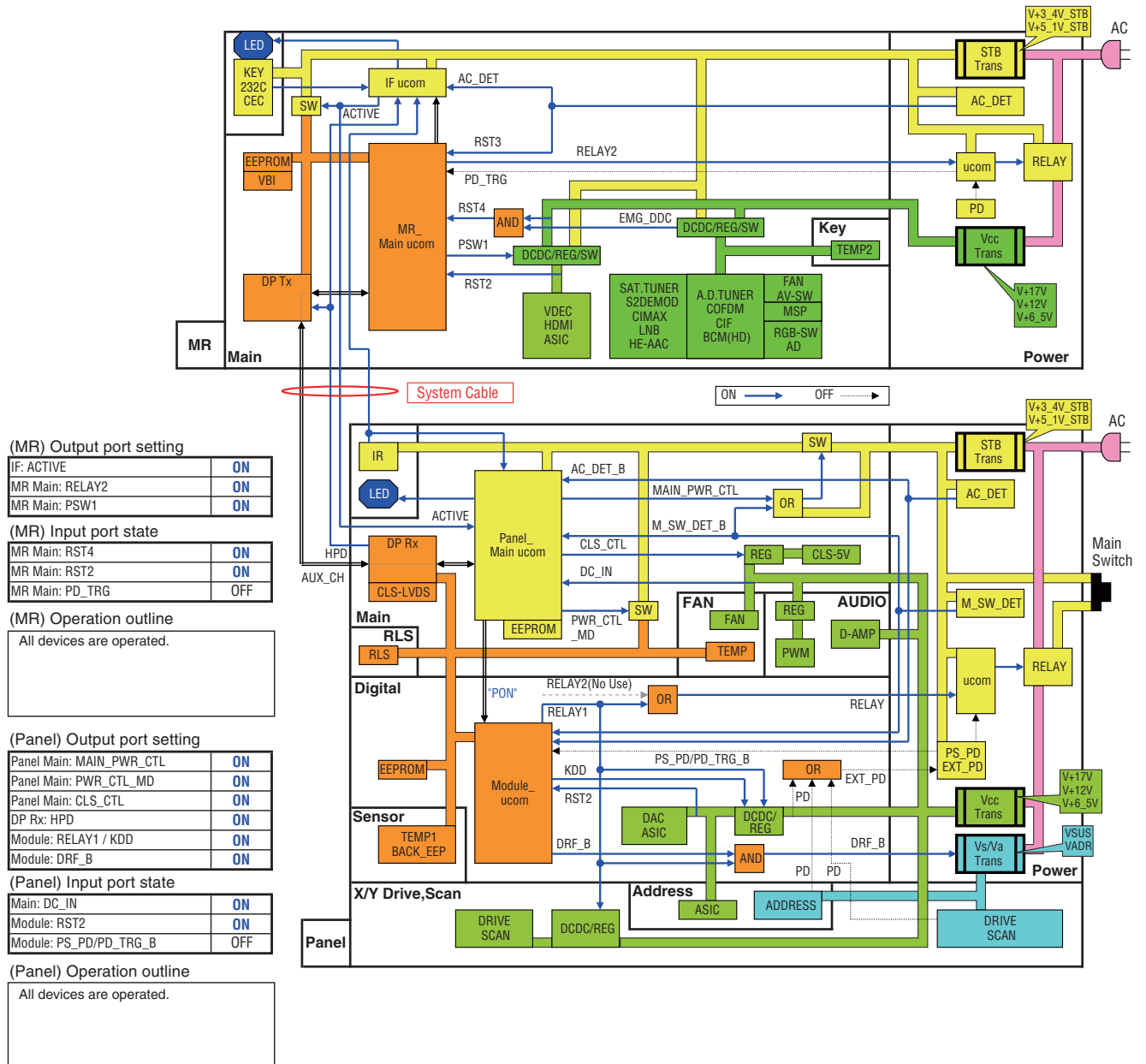
Panel Main: MAIN_PWR_CTL	ON
Panel Main: PWR_CTL_MD	ON
Panel Main: CLS_CTL	OFF
DP Rx: HPD	ON
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

- (Panel) Operation outline
- Periphery of the Panel main microcomputer, IR, DP Rx and module microcomputer are operated.
(As same state as the active standby)

PDP Screen ON



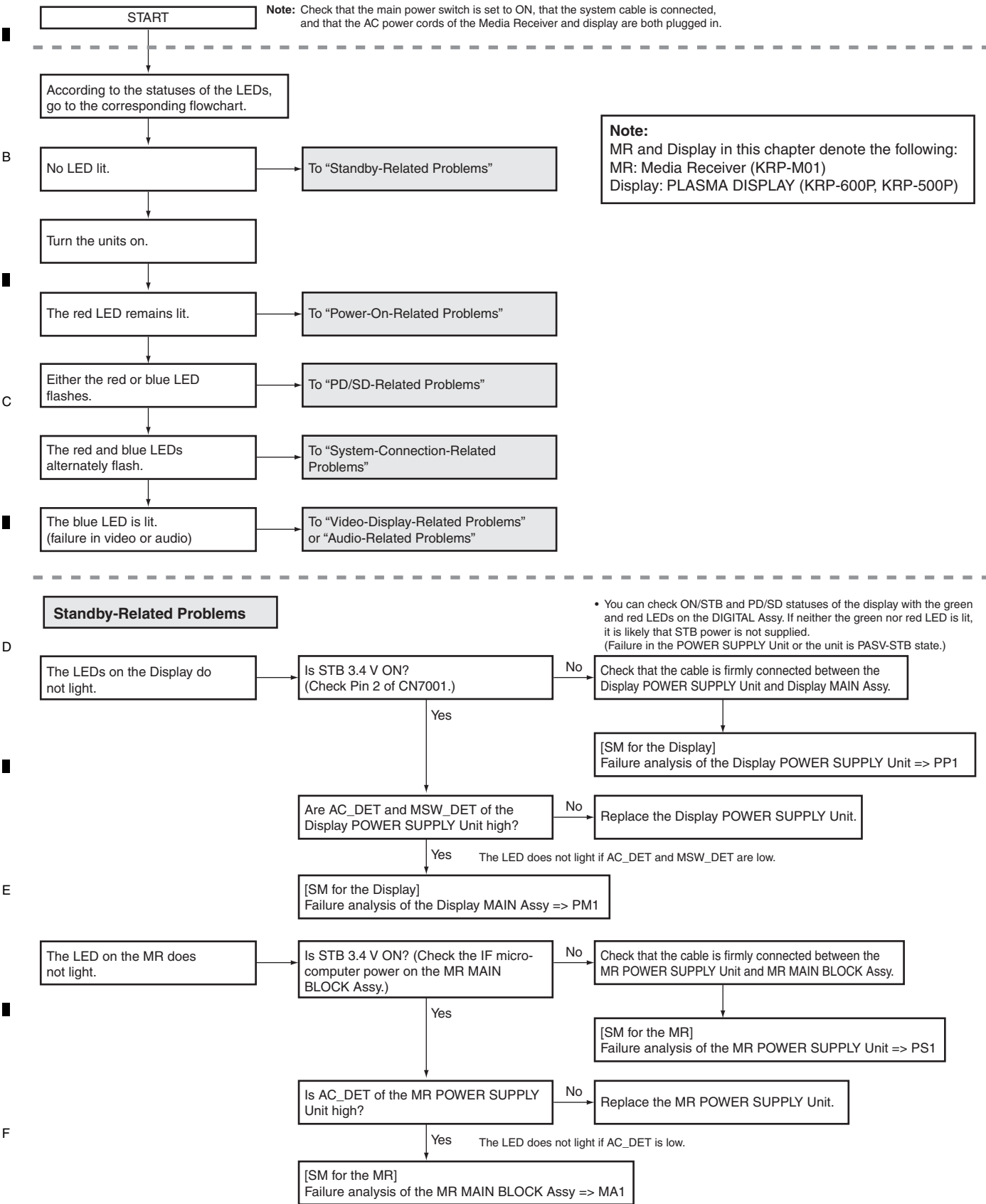
1234

5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

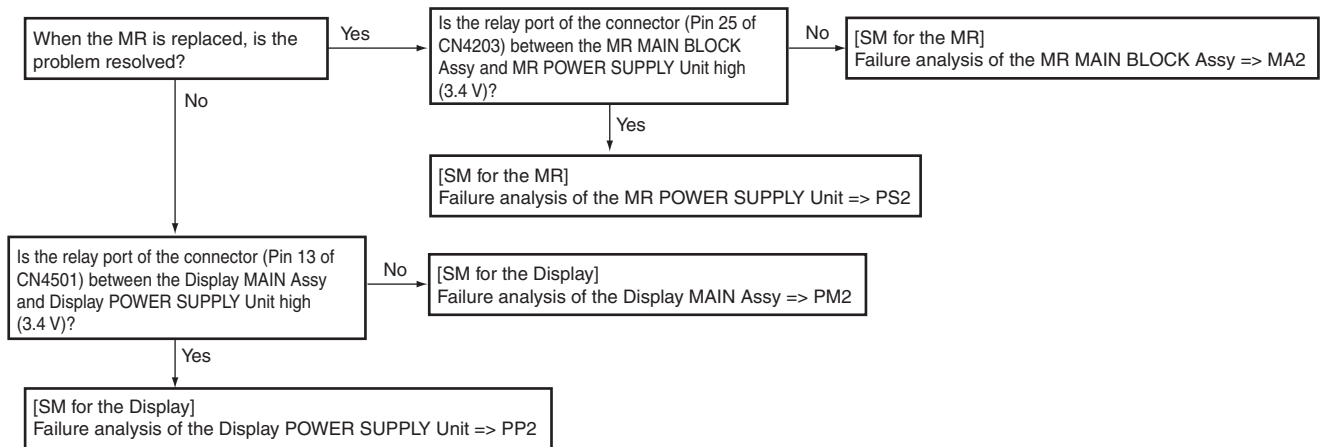
A

[1] WHOLE UNIT

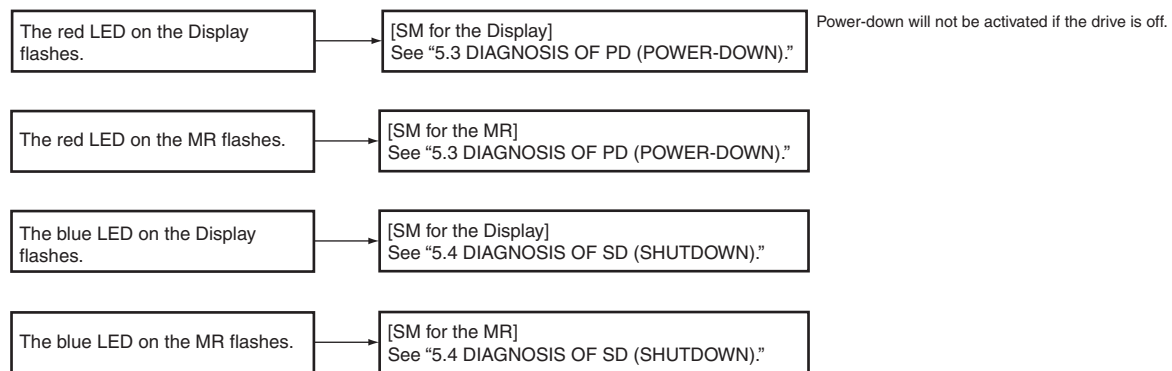
Flowchart of Failure Analysis for The Whole Unit



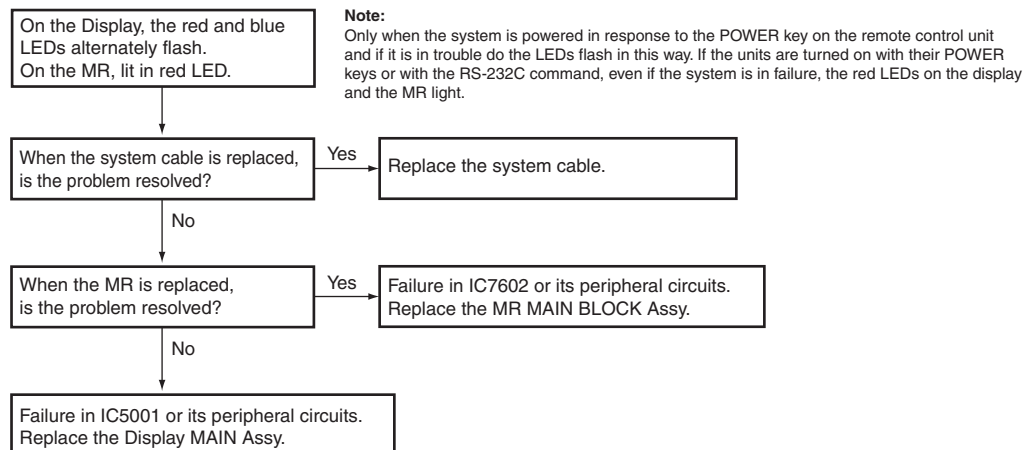
Power-On-Related Problems



PD/SD-Related Problems

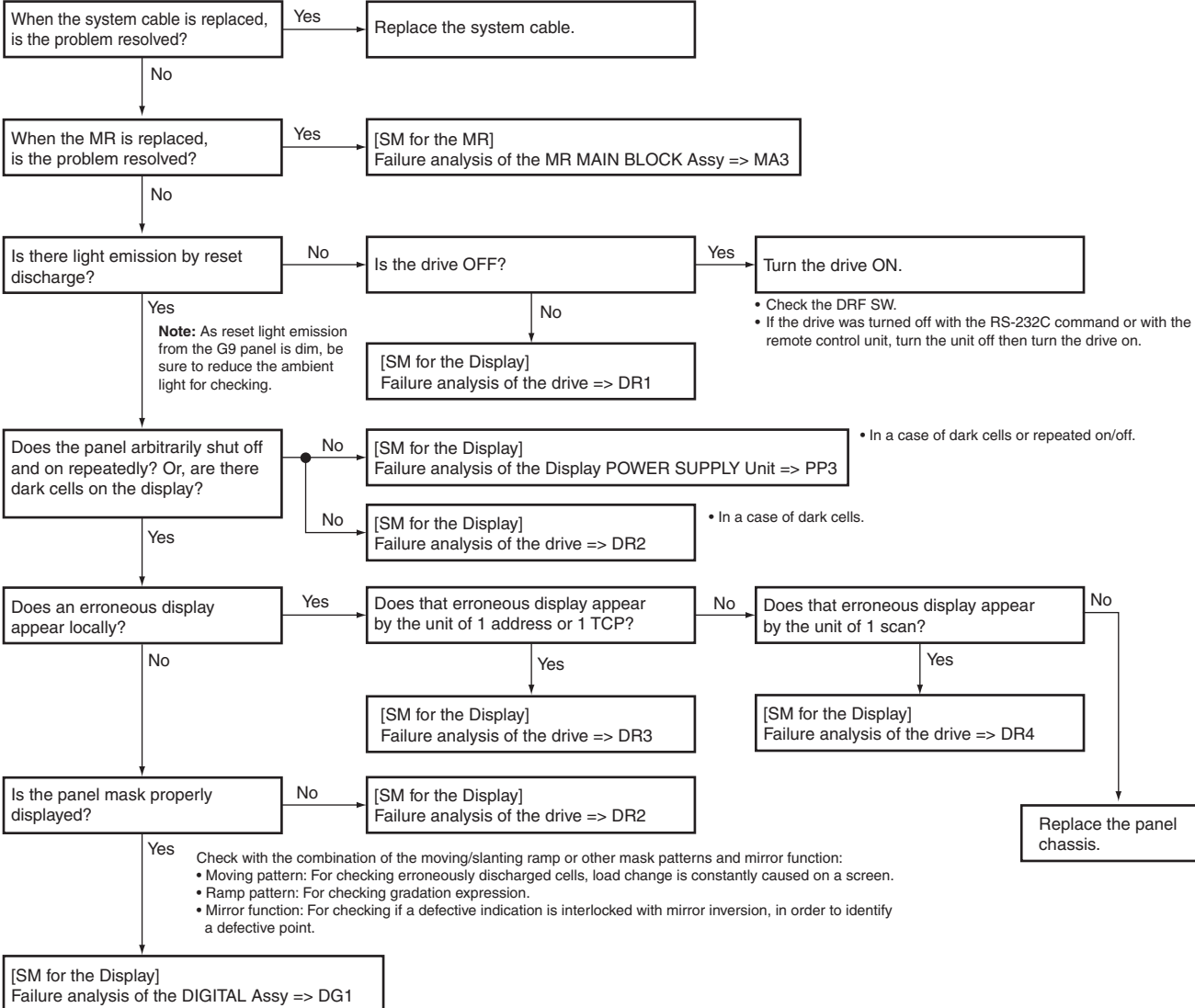


System-Connection-Related Problems



A

Video-Display-Related Problems



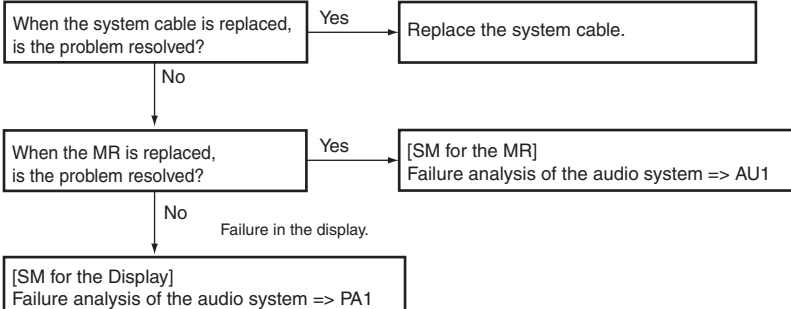
B

C

D

E

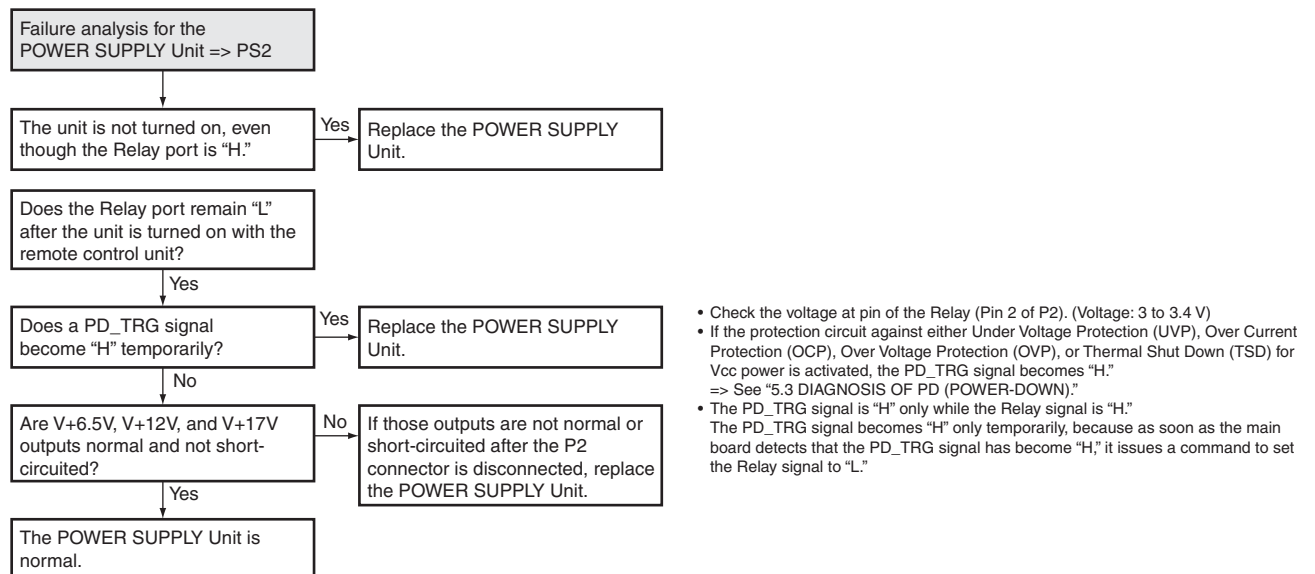
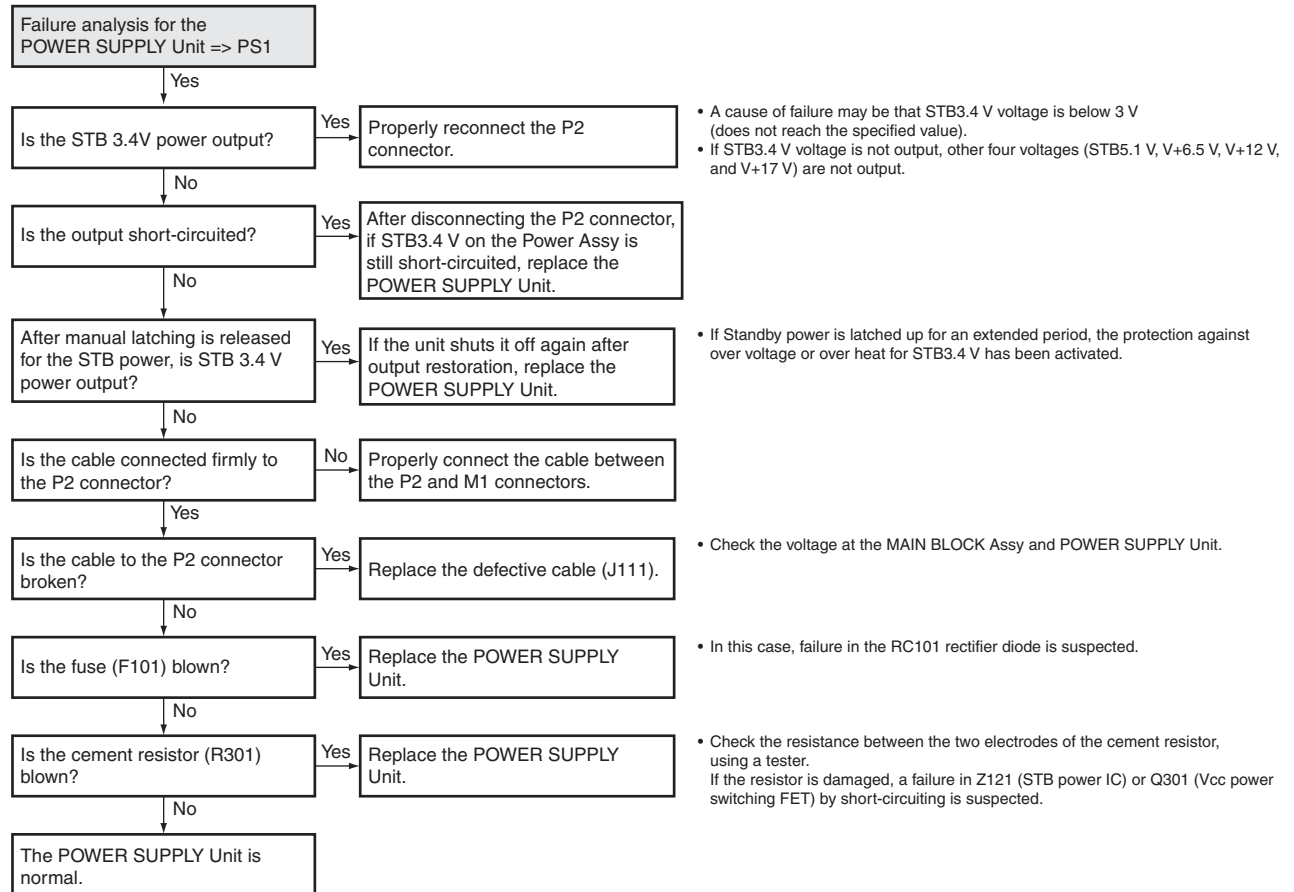
Audio-Related Problems



F

[2] POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit



[3] MAIN BLOCK ASSY

Flowchart of Failure Analysis for The MAIN BLOCK Assy

Failure analysis for the
MAIN BLOCK Assy => MA1

The STB LED does not light although
STB 3.4 V power is supplied.

Is resetting of the IF
microcomputer (pin 10) canceled?

No

Replace the MAIN BLOCK Assy.

Failure in the RST IC (IC6801) output or its peripheral circuits.

Yes

Is the voltage at Pin 13 of the M2
connector High?

No

Replace the MAIN BLOCK Assy.

Failure in the line between the IF microcomputer and M2 connector.

Yes

Is the M2 connector securely
connected?

No

Securely connect the M2 connector.

Yes

Is the cable that is connected to
the M2 connector broken?

Yes

Replace the cable (J112).

No

No problem with the MAIN BLOCK
Assy. Check the LED Assy.

Failure analysis for the
MAIN Assy => MA2

The RELAY port does not work.
The power is not turned on.

Are the voltages (1.5 V/2.5 V/3.4 V)
supplied to the main microcomputer?

No

Replace the MAIN BLOCK Assy.

Yes

Is voltage at REQ_IF (TP6830) on
the MAIN BLOCK Assy High
(3.4 V)?

No

Can the unit be turned on, using
the remote control unit?

No

Replace the system cable that
connects between the Display and
MAIN BLOCK Assy (MR).

NG

Replace the MAIN BLOCK Assy.

Yes

Can the unit be turned on, using
the Power switch on the unit?

No

Replace the cable (J112) that
connects between the KEY, LED
and MAIN BLOCK Assys.

NG

Replace the KEY Assy.

NG

Replace the MAIN BLOCK Assy.

Can the unit be turned on, using
RS-232C commands?

No

Replace the 50P cable (J203) that
connects between the REAR_IO
and MAIN BLOCK Assys.

NG

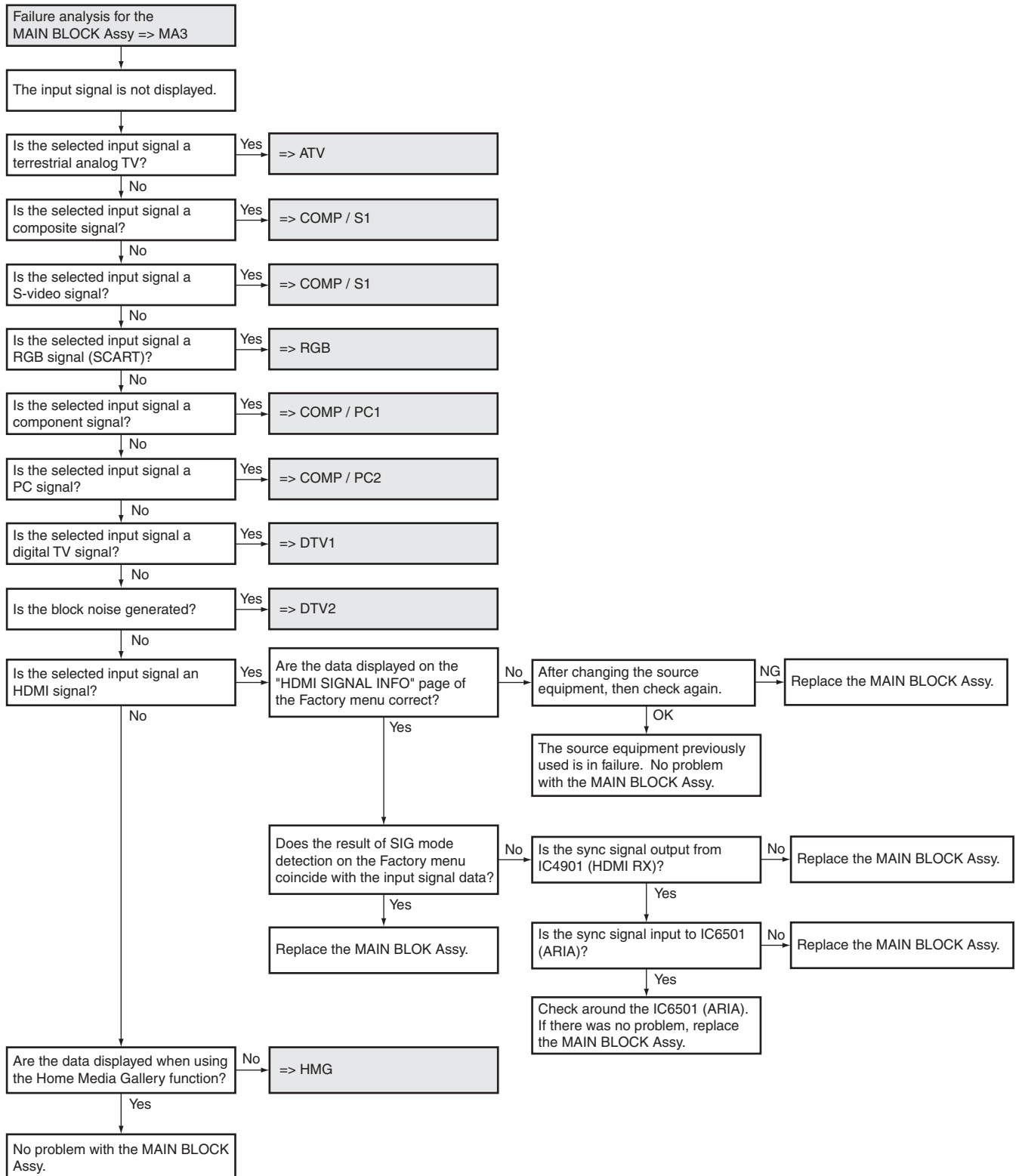
Replace the REAR_IO Assy.

NG

Replace the MAIN BLOCK Assy.

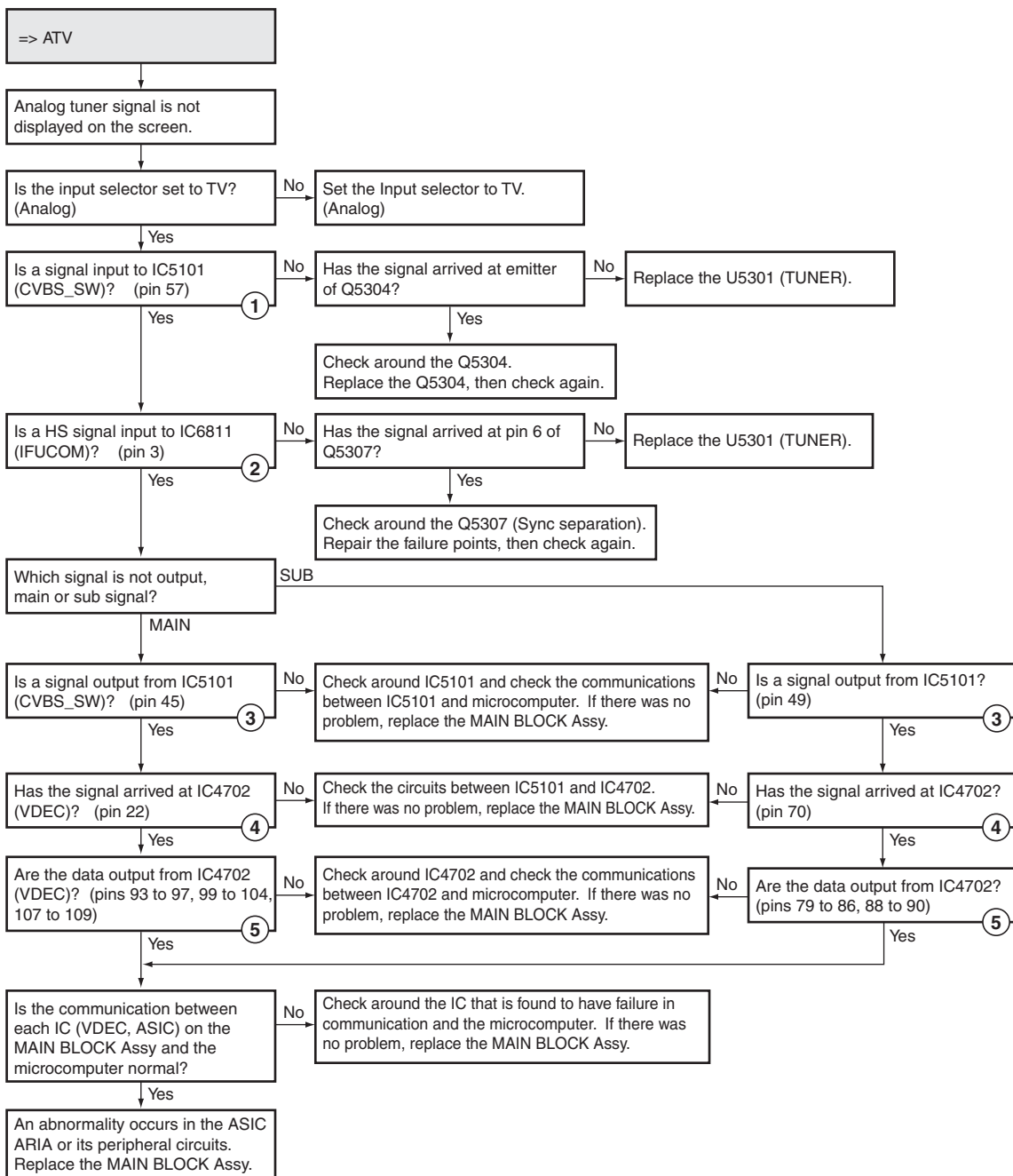
Replace the MAIN BLOCK Assy.

Flowchart of Failure Analysis for The MAIN BLOCK Assy



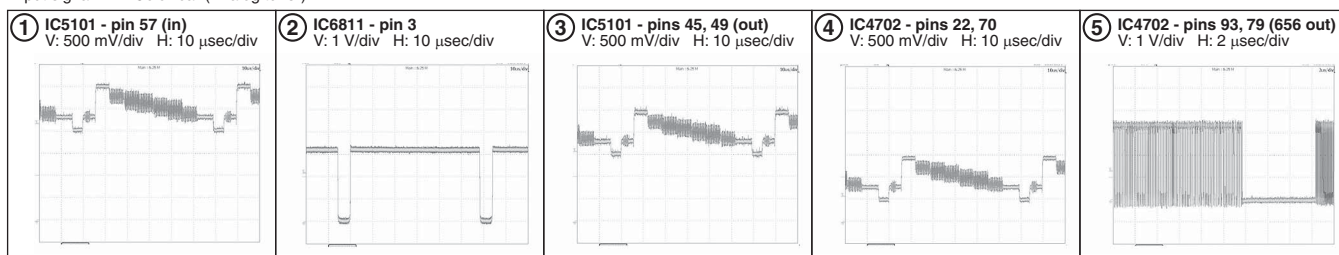
[4] VIDEO SYSTEM

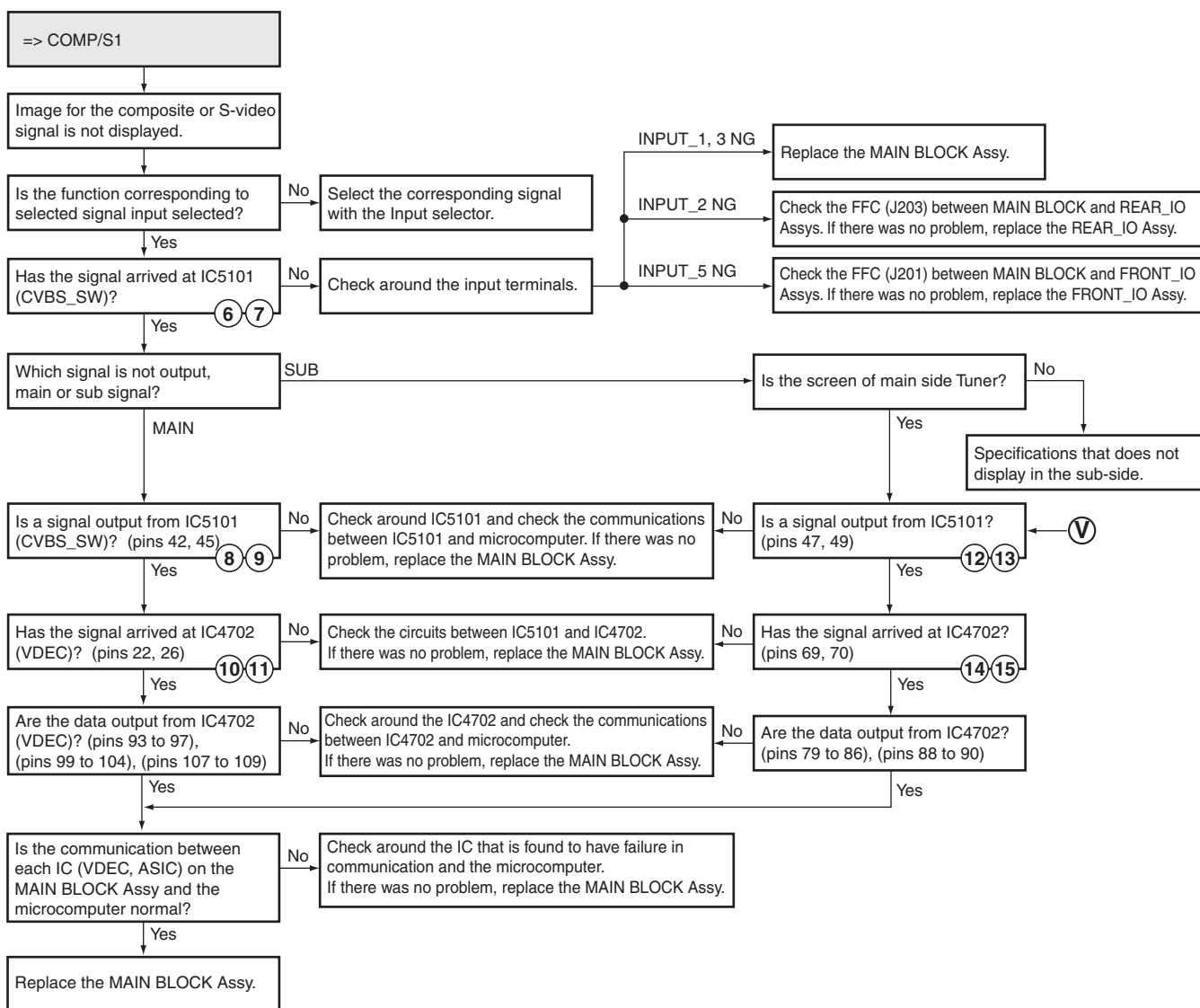
Flowchart of Failure Analysis for The Video System



• Waveforms

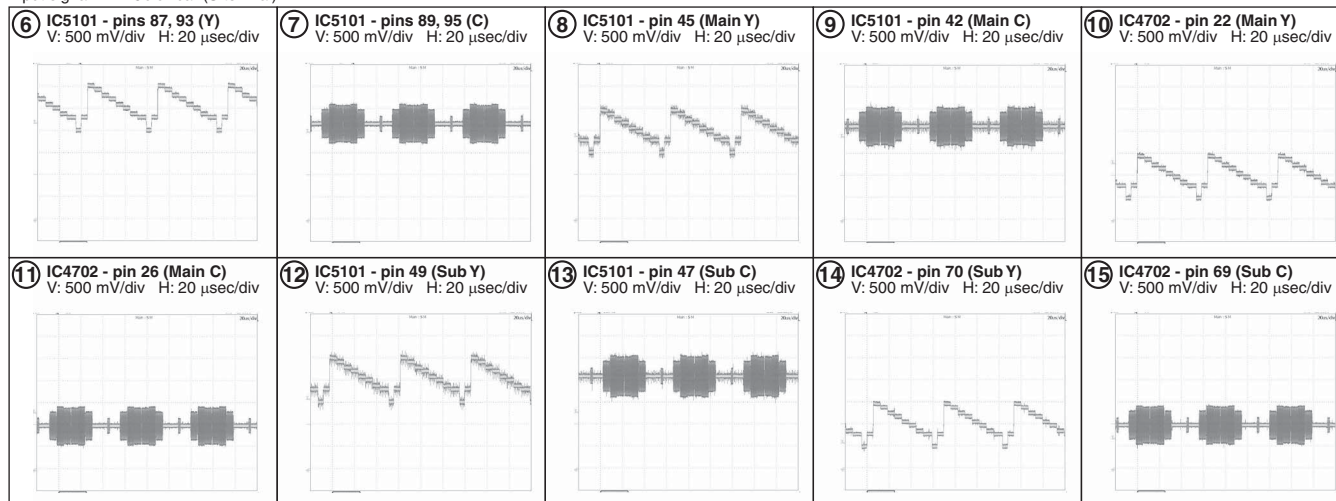
Input signal: PAL Color-bar (Analog tuner)





• Waveforms

Input signal: PAL Color-bar (S terminal)



A

=> RGB

Image for the RGB (SCART) input signal is not displayed.

Is the function corresponding to selected signal input selected?

No

Select the corresponding signal with the Input selector.

Yes

B

Which signal is not output, main or sub signal?

Sub

Is the screen of main side Tuner?

No

Specifications that does not display in the sub-side.

Main

Go to **V**.

Has the signal arrived at IC5501 (RGBSW)?

No

Check the circuits between JA7502 and IC5501. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is a signal output from IC5501? (pins 41, 43 and 45)

No

Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

16 **17** **18**

C

Has the signal arrived at IC4702? (pins 27, 28 and 65)

No

Check the circuits between IC5501 and IC4702. If there was no problem, replace the MAIN BLOCK Assy.

Yes

19 **20** **21**

Is the communication between each IC (VDEC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No

Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

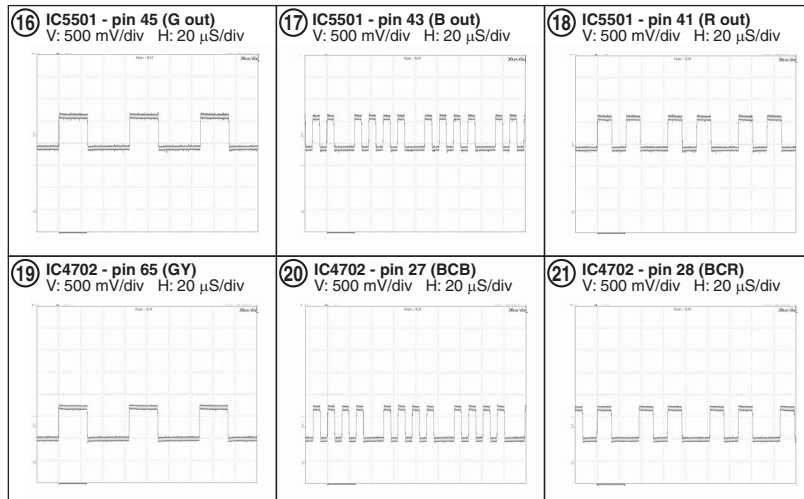
Yes

D

Replace the MAIN BLOCK Assy.

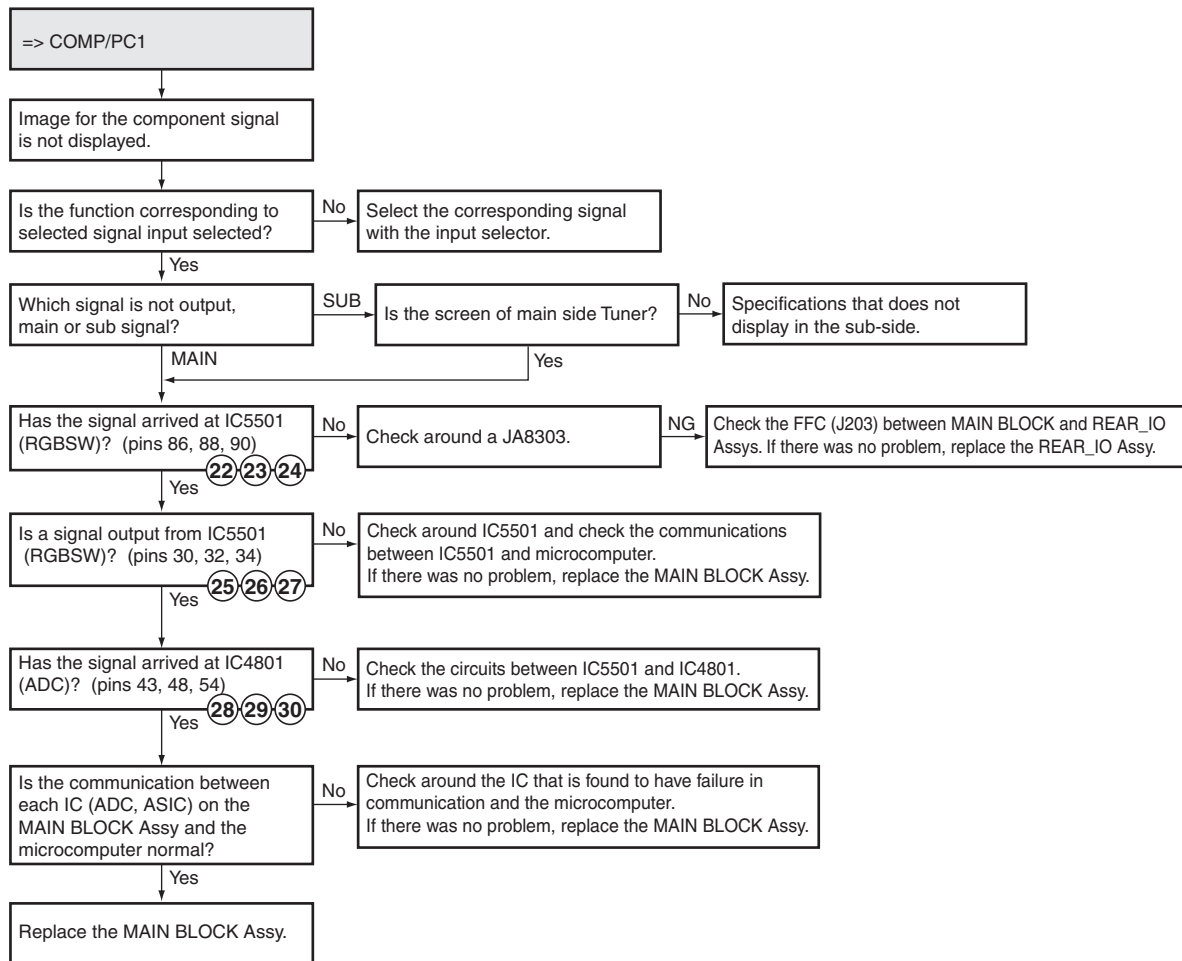
Waveforms

Input signal: PAL Color-bar (SCART RGB terminal)



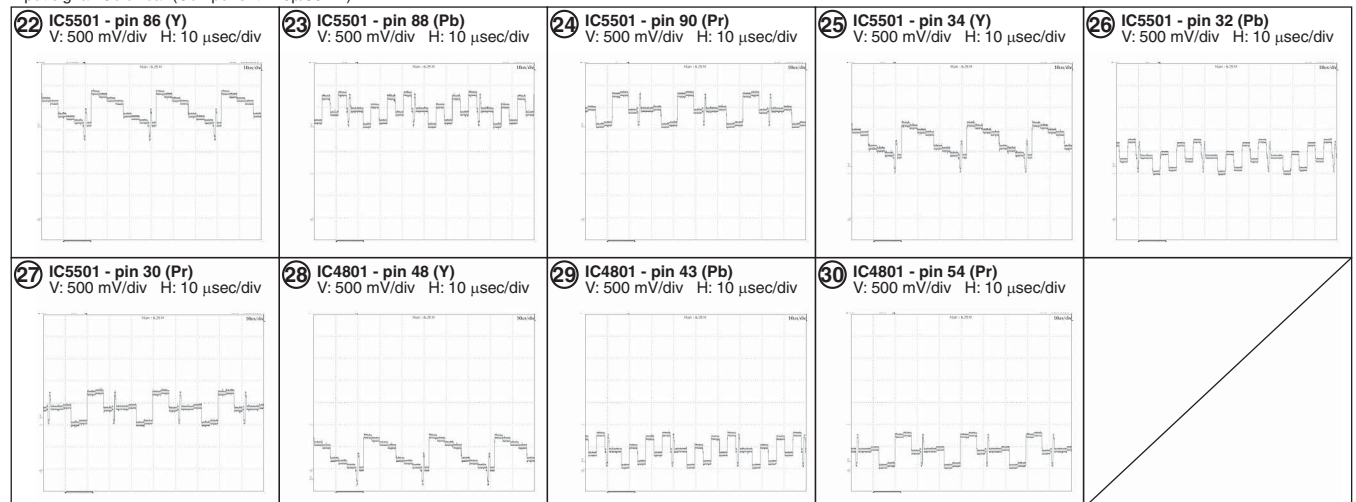
E

F



• Waveforms

Input signal: Color-bar (Component 720p/50 Hz)



A

=> COMP/PC2

Image for the PC signals is not displayed.

Is the function corresponding to selected signal input selected?

No
Select the corresponding signal with the input selector.

Yes

B

Which signal is not output, main or sub signal?

SUB
Is the screen of main side Tuner?

No
Specifications that does not display in the sub-side.

MAIN

Yes

Has the signal arrived at IC5501 (RBSW)? (pins 2, 4, 6, 14, 15)

No
Check around a CN8503.

NG
Check the FFC (J201) between MAIN BLOCK and FRONT_IO Assys. If there was no problem, replace the FRONT_IO Assy.

Yes

Is a signal output from IC5501 (RBSW)? (pins 30, 32, 34)

No
Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

C

Has the signal arrived at IC4801 (ADC)? (pins 43, 48, 54)

No
Check the circuits between IC5501 and IC4801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is the communication between each IC (ADC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

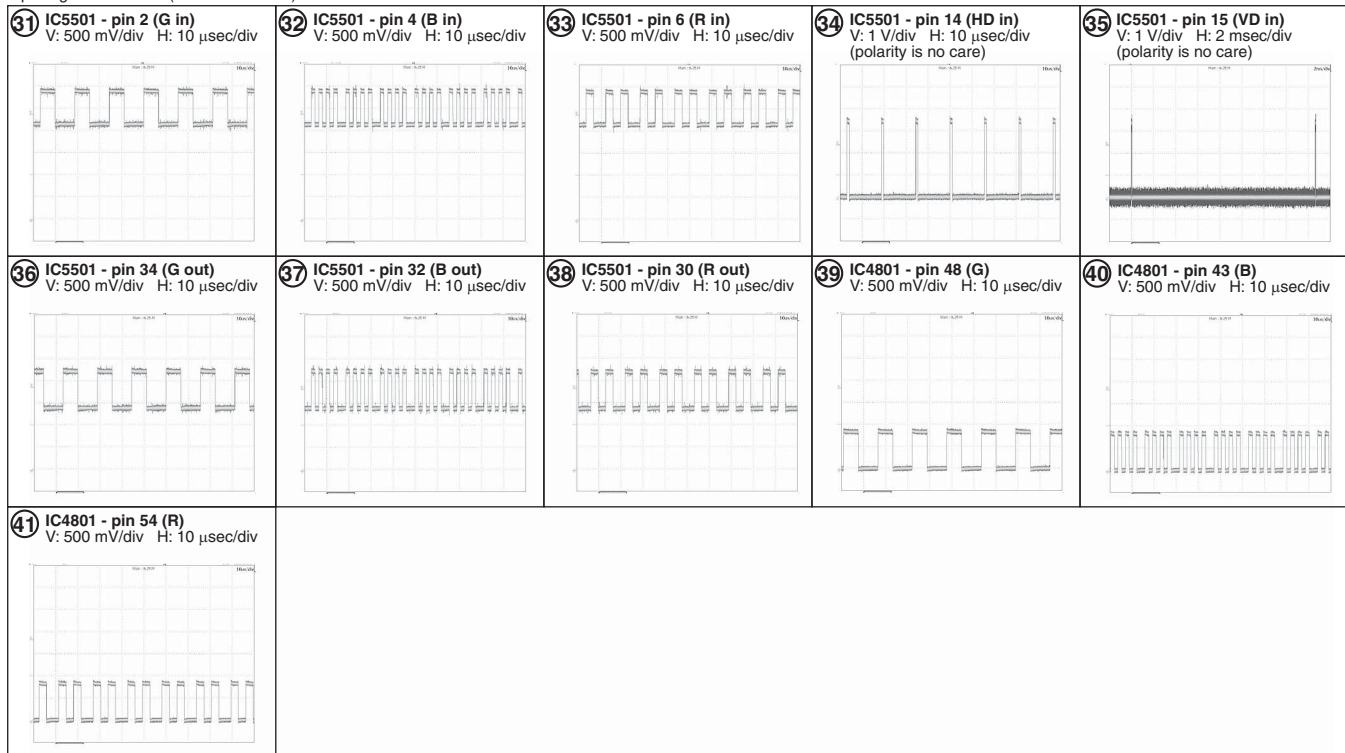
Yes

Replace the MAIN BLOCK Assy.

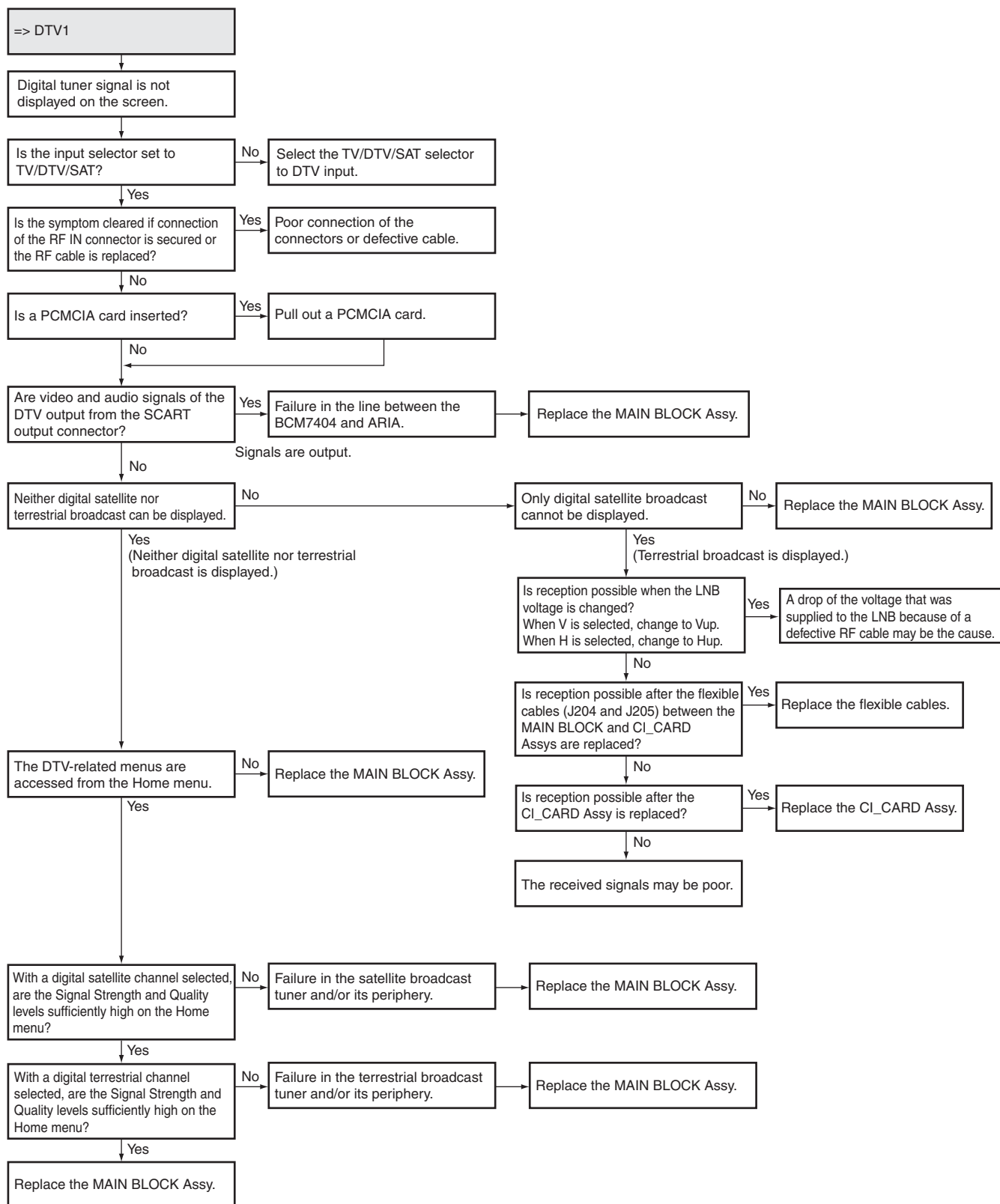
D

● Waveforms

Input signal: Color-bar (PC SXGA/60 Hz)



F



A

[Common to the DTVs 1 and 2] How to Display the DTB Service Menu

As you can display the DTB Service Menu from Factory mode, you should have a remote control unit that supports Factory mode.

Step 1: Press the **FACTORY** key on the remote control unit to display the **INFORMATION** screen in Factory mode.

Step 2: Press the **MUTING** key on the remote control unit 4 times to display the **INITIALIZE** screen.

Step 3: Press the **↓** key on the remote control unit twice so that **DTB SERVICE MODE (+)** is displayed at the bottom of the screen.

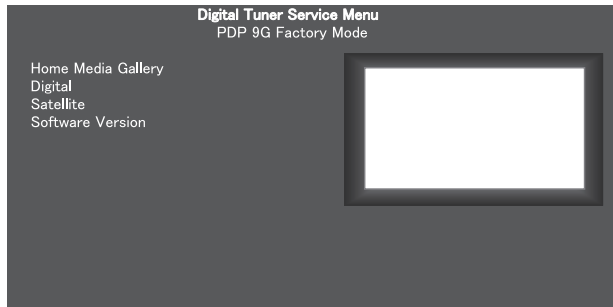
Step 4: Press the **ENTER/SET** key on the remote control so that **MODE SHIFT <=> :No** is displayed at the bottom of the screen.

Step 5: Press the **←** or **→** key on the remote control so that **MODE SHIFT <=> :YES** is displayed at the bottom of the screen.

Step 6: Press the **ENTER/SET** key on the remote control unit for 5 sec or more to display the DTB Service Menu.

B

Top page of the DTB Service Menu



C

Digital : Service menu for digital terrestrial broadcast reception

Satellite : Service menu for digital satellite broadcast reception

How to Change the LNB Voltage on the DTV Service Menu

On the Satellite screen of the DTV Service menu below, move the cursor to **LNB POWER** by using the **↓** key on the remote control unit then change the LNB voltage, using the **←** or **→** key.

D

The LNB voltage values are as shown below:

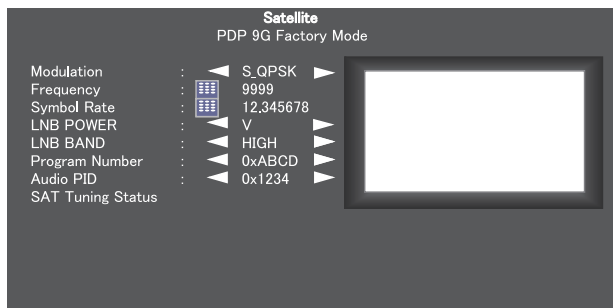
V: 13 V (Typ.)

H: 18 V (Typ.)

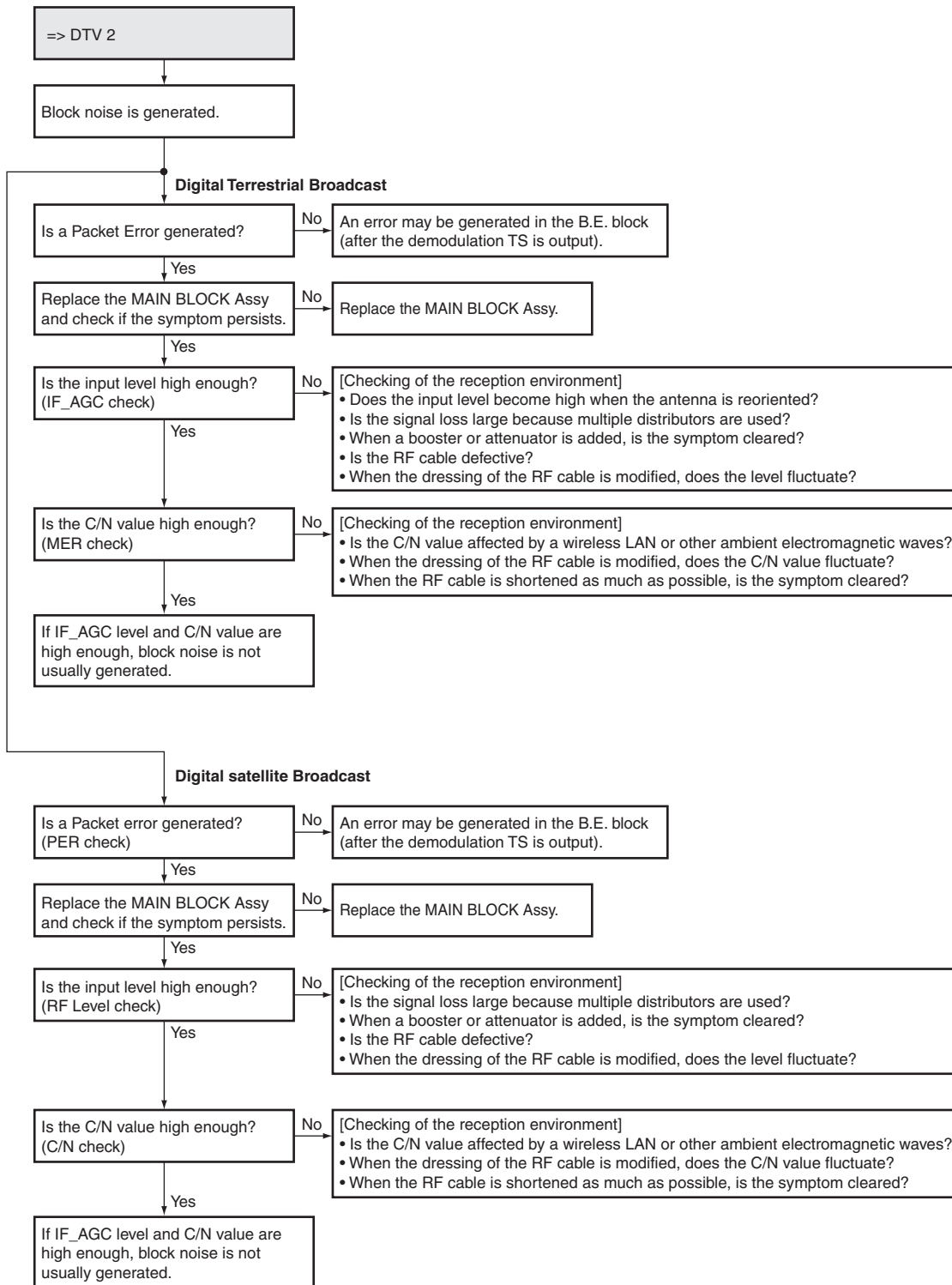
Vup: V+1 V

Hup: H+1 V

E



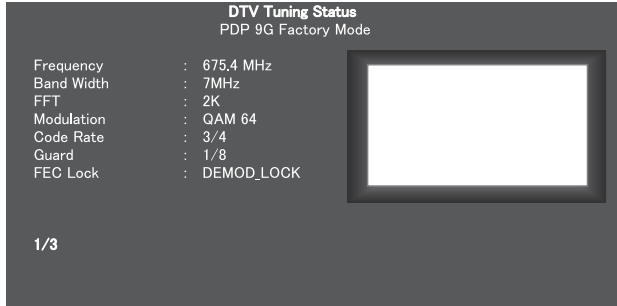
F



How to Confirm the DTV Tuning Status on the Digital Tuner Service Menu

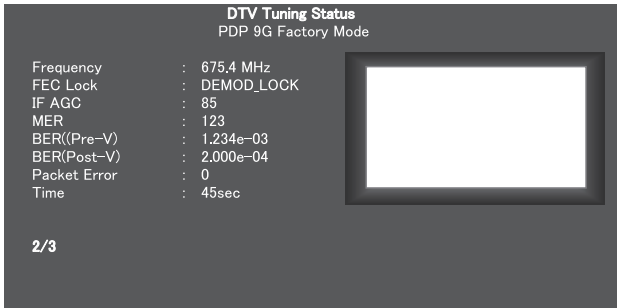
If block noise is generated, it is necessary to acquire the DTV Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the DTV Tuning Status for another reception frequency of the signal in which block noise is not generated. The DTV Tuning Status page to be acquired is shown below:

DTV Tuning Status (1/3)



Frequency : Frequency of the signal currently being received.
 Band Width : Bandwidth of the signal currently being received.
 FFT : FFT mode of the signal currently being received (2K or 8K).
 Modulation : Modulation method for the signal currently being received.
 Code Rate : Code Rate of the signal currently being received.
 Guard : Guard Interval of the signal currently being received.
 FEC Lock : Current lock status of the receiver. The available lock statuses are as shown below:
 DEMOD_LOCK
 FEC_LOCK
 DRX_LOCK
 UNLOCK

DTV Tuning Status (2/3)



IF AGC : IF AGC level of the signal currently being received.
 The AGC-level limits in normal reception are shown below.
 Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Code Rate	Signal-level Limit in Normal Reception
QPSK	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
16QAM	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
64QAM	1/2	100
	2/3	58
	3/4	56
	5/6	55
	7/8	54

BER (Pre-V) : Pre-Viterbi Bit Error Rate of the signal currently being received.
 BER (Post-V) : Post-Viterbi Bit Error Rate of the signal currently being received. If the value is 2.000E-04, block noise is not caused by a problem in the tuner.
 Packet Error : Packet error count of the signal currently being received. If the packet error count is "0," block noise caused by the tuner will not be generated.
 Time : Measured duration of BER (Pre-V), BER (Post-V), or Packet Error. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

MER : Quality of the signal currently being received.
 The signal qualities in normal reception are shown below.
 Use the following values only as a guide.

Modulation	Code Rate	MER Limit in Normal Reception
QPSK	1/2	93
	2/3	85
	3/4	67
	5/6	76
	7/8	82
16QAM	1/2	98
	2/3	116
	3/4	127
	5/6	138
	7/8	145
64QAM	1/2	140
	2/3	170
	3/4	184
	5/6	197
	7/8	206

A

DTV Tuning Status (3/3)

DTV Tuning Status

PDP 9G Factory Mode

Program Number : 0x0101

Video PID : 0xABCD

Audio PID : 0x1234

PCR PID : 0x5678

Video Format : 1080i@60

Aspect : 16 : 9

3/3

Program Number : No. of the program currently being received.
Video PID : Video PID of the program currently being received.
Audio PID : Audio PID of the program currently being received.
PCR PID : PCR PID of the program currently being received.
Video Format : Video Format of the program currently being received.
Aspect : Aspect ratio of the program currently being received.

B

C

D

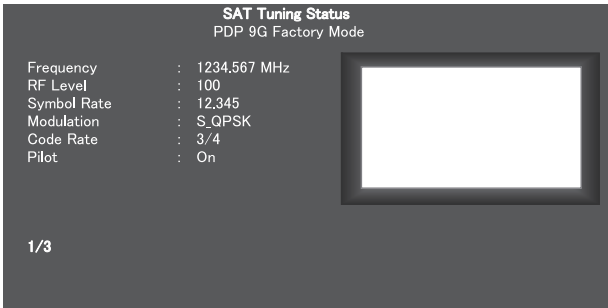
E

F

How to Confirm the SAT Tuning Status on the Digital Tuner Service Menu

If block noise is generated, it is necessary to acquire the SAT Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the SAT Tuning Status for another reception frequency of the signal in which block noise is not generated. The SAT Tuning Status page to be acquired is shown below:

SAT Tuning Status (1/3)

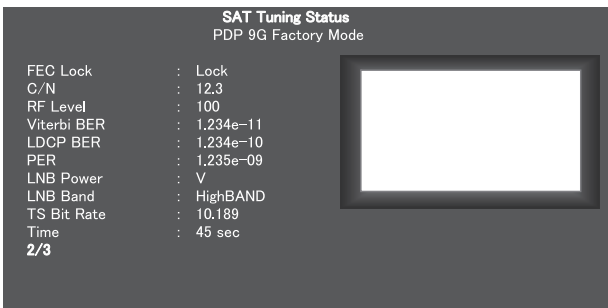


Frequency : Frequency of the signal currently being received.
 RF Level : Level of the signal currently being received.
 The signal-level limits in normal reception are shown below. Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Signal-level Limit in Normal Reception
S2_QPSK	50 to 75
S2_8PSK	50 to 75
S_QPSK	50 to 75

Modulation : Modulation method for the signal currently being received.
 Symbol Rate : Symbol Rate of the signal currently being received.
 Code Rate : Code Rate of the signal currently being received.
 Pilot : On/off status of the Pilot signal currently being received.

SAT Tuning Status (2/3)



FEC Lock : Current lock/unlock status of the error-correction function of the receiver.
 C/N : Current reception C/N. The limit C/Ns in normal reception are shown below. Use the following values only as a guide.

Limit C/N in normal reception

Modulation	Code Rate	Limit C/N in Normal Reception	Modulation	Code Rate	Limit C/N in Normal Reception
S2_QPSK	1/2	1.1	S2_8PSK	3/4	8.1
S2_QPSK	3/5	2.4	S2_8PSK	5/6	9.6
S2_QPSK	2/3	3.2	S2_8PSK	8/9	11.0
S2_QPSK	3/4	4.2	S2_8PSK	9/10	11.3
S2_QPSK	4/5	4.8	S_QPSK	1/2	5.2
S2_QPSK	5/6	5.3	S_QPSK	2/3	7.0
S2_QPSK	8/9	6.4	S_QPSK	3/4	8.0
S2_QPSK	9/10	6.6	S_QPSK	5/6	9.1
S2_8PSK	3/5	7.9	S_QPSK	7/8	9.8
S2_8PSK	2/3	8.0			

Viterbi BER : Bit error rate while the S_QPSK signal is being received. While the S2_QPSK or S2_8PSK signal is received, **** is displayed. If the value is 2e-4 or less, block noise is not caused by a problem in the tuner.

LDOP BER : Bit error rate while the S2_QPSK or S2_8PSK signal is being received. While the S_QPSK signal is received, **** is displayed.

PER : Packet error rate during reception. If the value is 0.000e-00, block noise is not caused by a problem in the tuner.

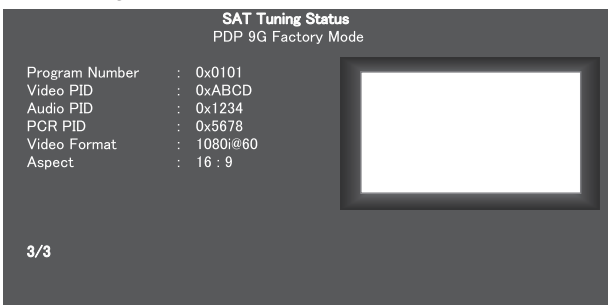
LNB POWER: Voltage currently being supplied to the LNB

LNB BAND : Frequency band that is currently set to the LNB

TS Bit Rate : TS Bit Rate of the signal currently being received

Time : Measured duration of Viterbi BER, LDOP BER, or PER. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

SAT Tuning Status (3/3)



Program Number : No. of the program currently being received.

Video PID : Video PID of the program currently being received.

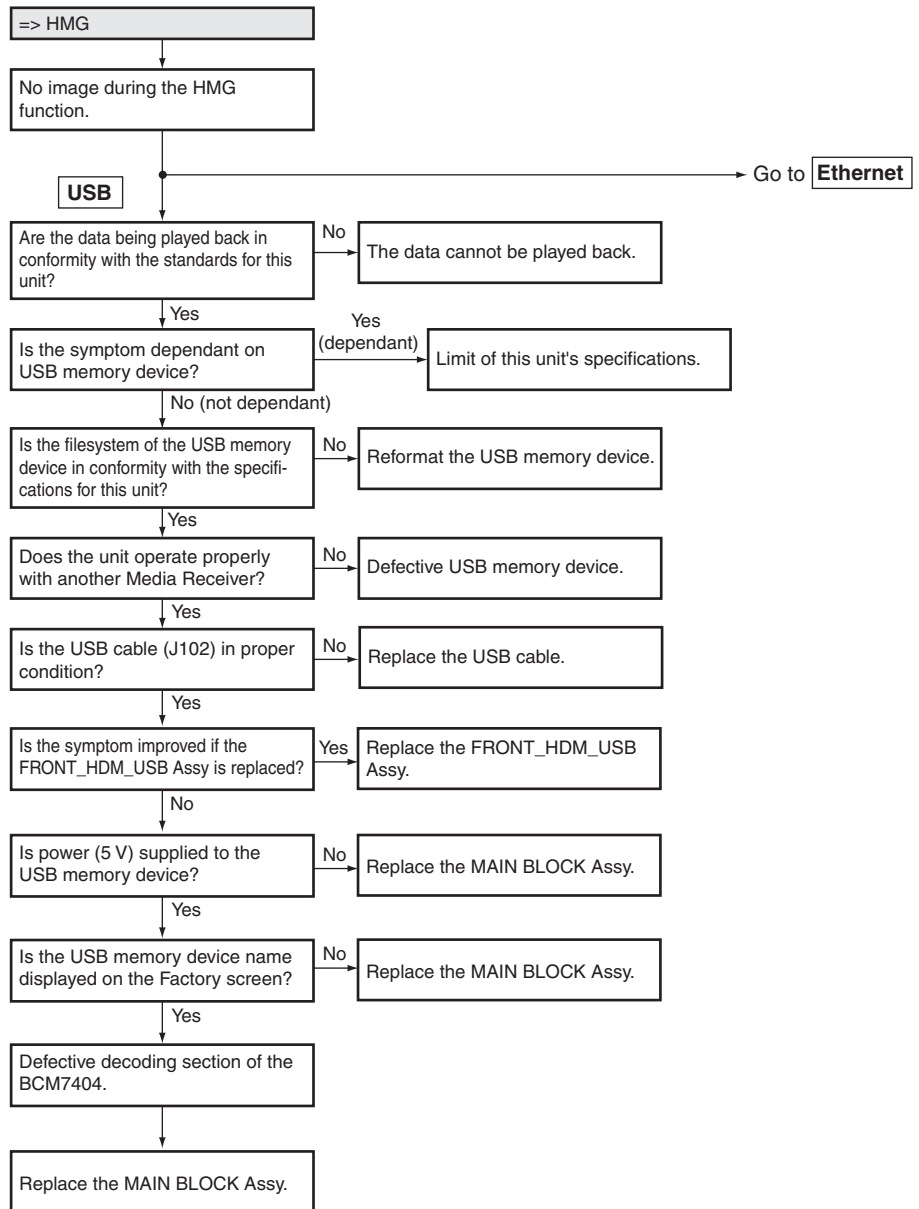
Audio PID : Audio PID of the program currently being received.

PCR PID : PCR PID of the program currently being received.

Video Format : Video Format of the program currently being received.

Aspect : Aspect ratio of the program currently being received.

Flowchart of Failure Analysis for The HMG



A

B

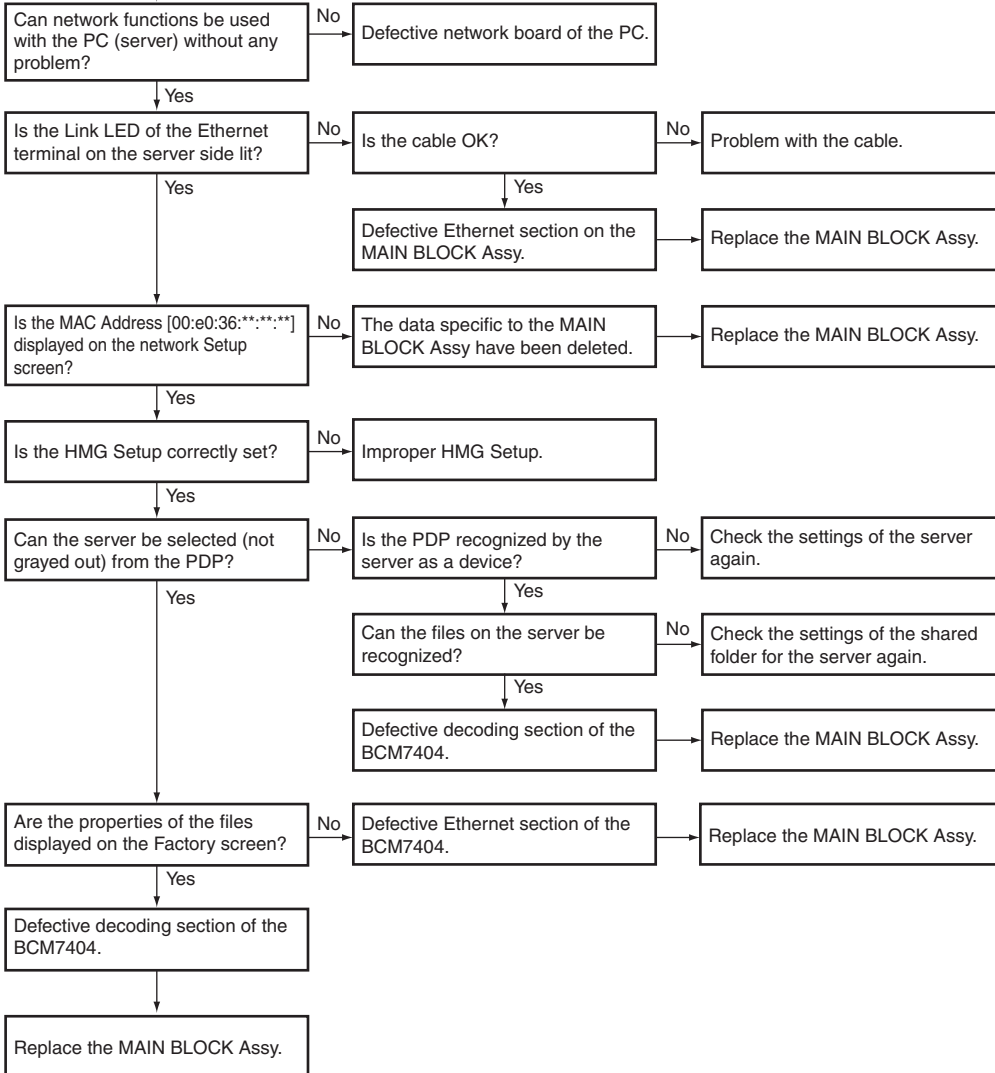
C

D

E

F

Ethernet



[HMG] How to enter DTB Service menu

Note: Use the remote control unit that supports Factory mode, because the DTB Service menu is accessible from Factory mode.

Step 1: Press the FACTORY key on the remote control unit to display the INFORMATION screen of Factory mode.

Step 2: Press the MUTING key on the remote control unit 4 times to display the INITIALIZE screen.

Step 3: Press the **↓** key on the remote control unit twice to display the “DTB SERVICE MODE (+)” indication at the bottom of the screen.

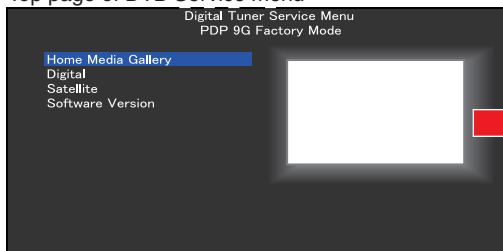
Step 4: Press the ENTER/SET key on the remote control unit to display the “MODE SHIFT <=>: No” indication at the bottom of the screen.

Step 5: Press the **←** or **→** key on the remote control unit until the “MODE SHIFT <=>: YES” indication is displayed at the bottom of the screen.

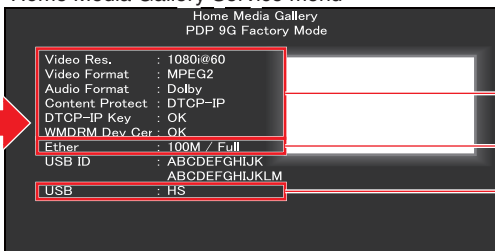
Step 6: Press and hold the ENTER/SET key on the remote control unit pressed for 5 seconds or more to activate DTB Service menu.

The Home Media Gallery (HMG) Service menu is indicated below:

Top page of DTB Service menu



Home Media Gallery Service menu



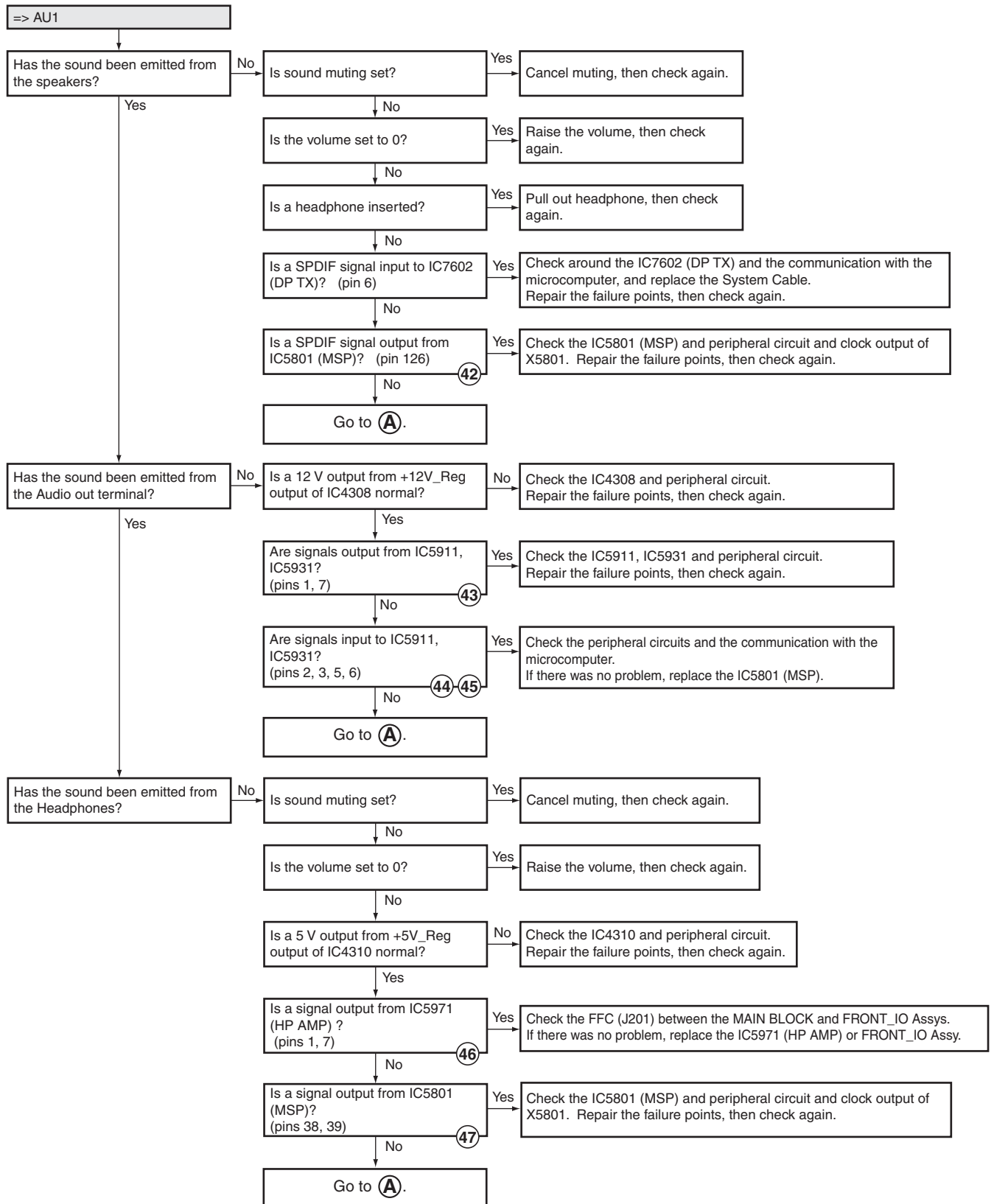
Content data

Ethernet connection information

USB device information

[5] AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System



A

A

Has the sound of the Analog broadcasting output?

No
Is a SIF signal input to IC5801? (pin 68)

No
Check the communications between the U5301 (FRONTEND) and the microcomputer and between the U5301 and IC5801. If there was no problem, replace the U5301 (FRONTEND), then check again.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

B

Has the sound of the Digital broadcasting output?

No
Is a I2S signal input to IC5801 (MSP)? (pins 100 to 102)

No
Is a signal output from IC6001 (BCM7404) of the MAIN BLOCK Assy?

No
Repair the DTB block or replace the MAIN BLOCK Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

Yes
Check around IC6001 (BCM7404) and repair the failure points, then check again.

C

Has the sound of the HDMI output?

No
Check that the HDMI switch of the MENU is properly set.

No
Set a MENU definitely, then check again.

Yes

Yes
Is a SPDIF signal output from IC4901 (HDMI RX)? (pin 78)

INPUT_1, 3, 4 No
Check the circuits between IC5001 (HDMI SW) and IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

INPUT_5 No
Check the FFC (J101) between MAIN BLOCK and FRONT_HDM_USB Assys. If there was no problem, replace the FRONT_HDM_USB Assy.

Yes
Is a SPDIF signal input to IC5801 (MSP)? (pin 4)

No
Check the communications around the IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

D

Has the sound of the INPUT 1, 3 (SCART) output?

No
Is a signal input to IC5801? (pins 24, 25, 36, 37)

No
Check the circuits between JA7502 (SCART) and IC5801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

Has the sound of INPUT 2 (SCART, RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 26, 27, 34, 35)

No
Check the FFC (J203) between the MAIN BLOCK and REAR_IO Assy. If there was no problem, replace the REAR_IO Assy.

Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

E

Has the sound of INPUT 5, PC (RCA) output?

No
Is a signal input to IC5801 (MSP)? (pins 30, 31)

No
Check the FFC (J201) between the MAIN BLOCK and FRONT_IO Assy. If there was no problem, replace the FRONT_IO Assy.

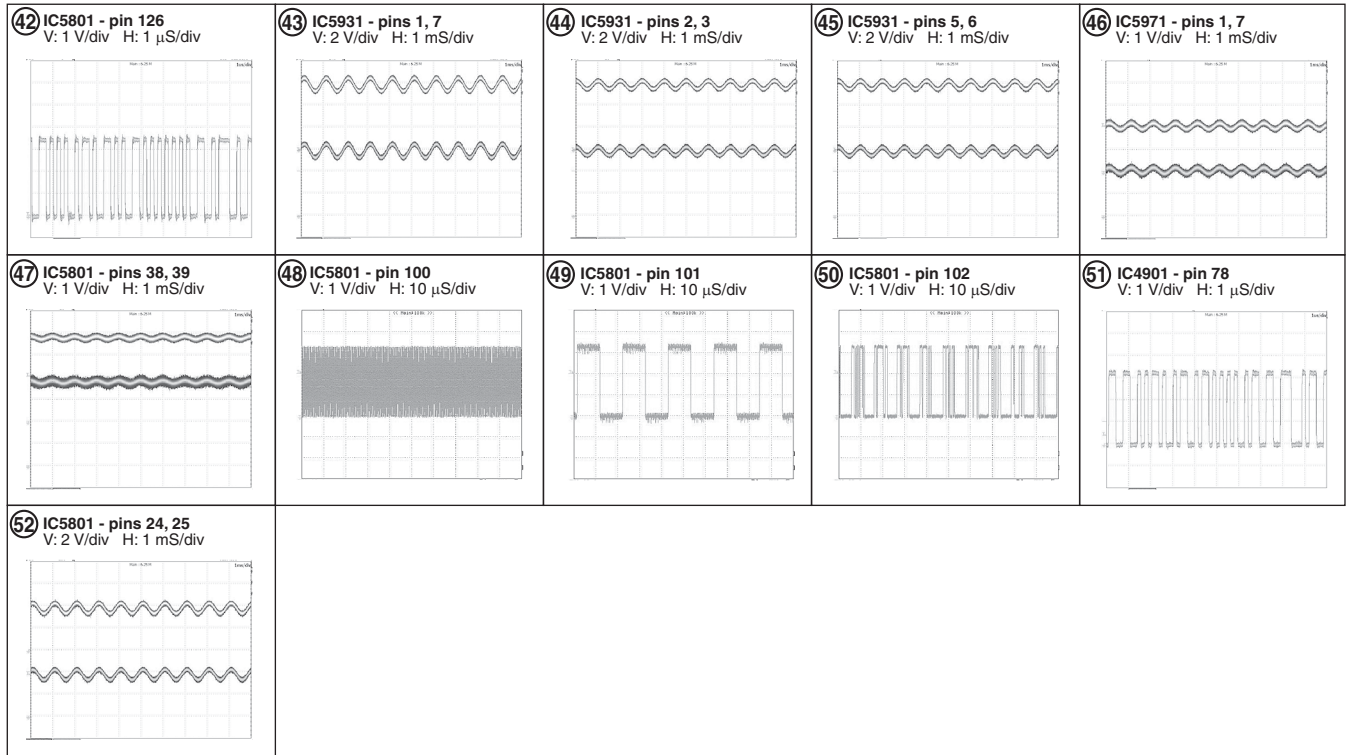
Yes

Yes
Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

F

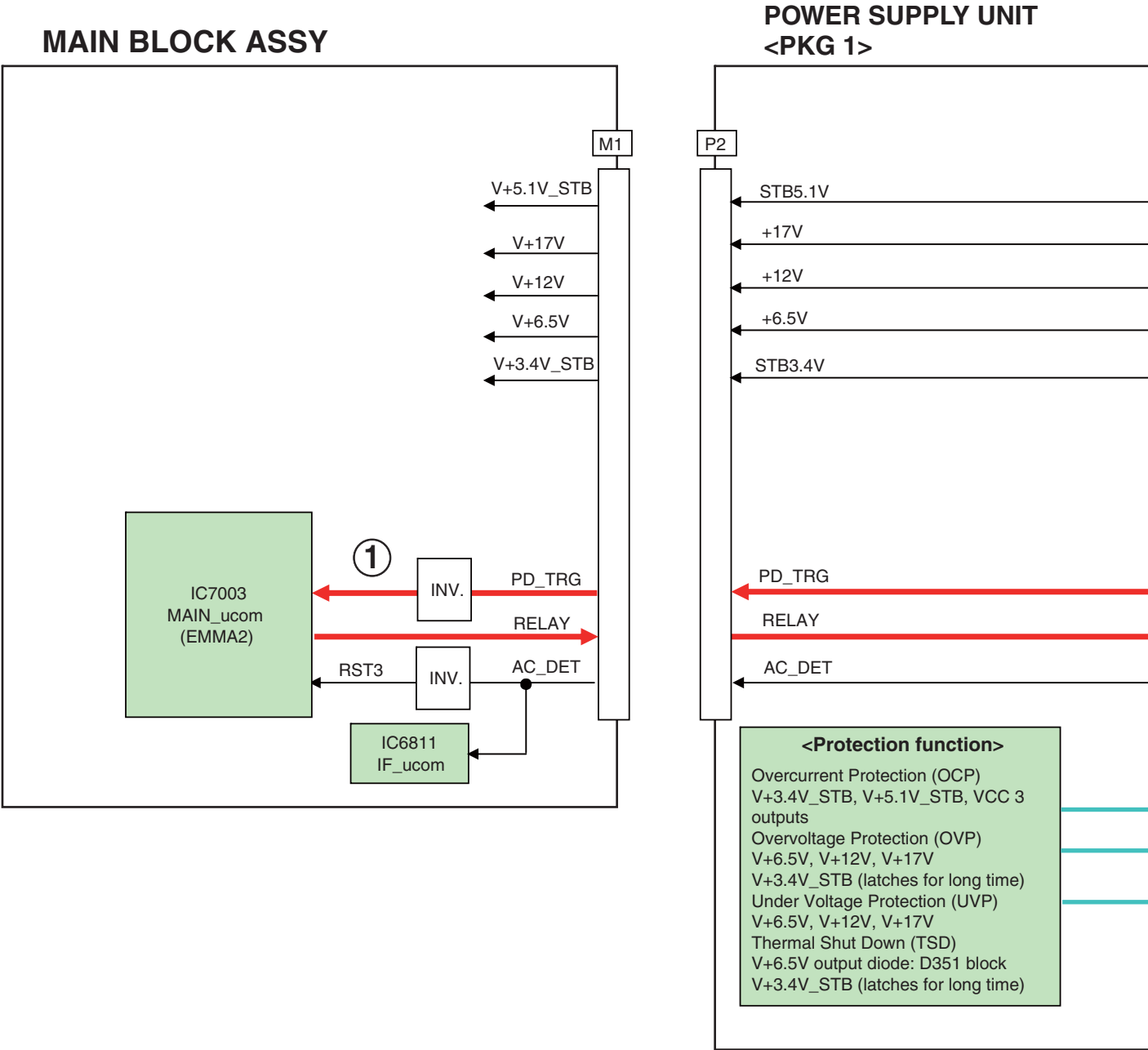
Waveforms

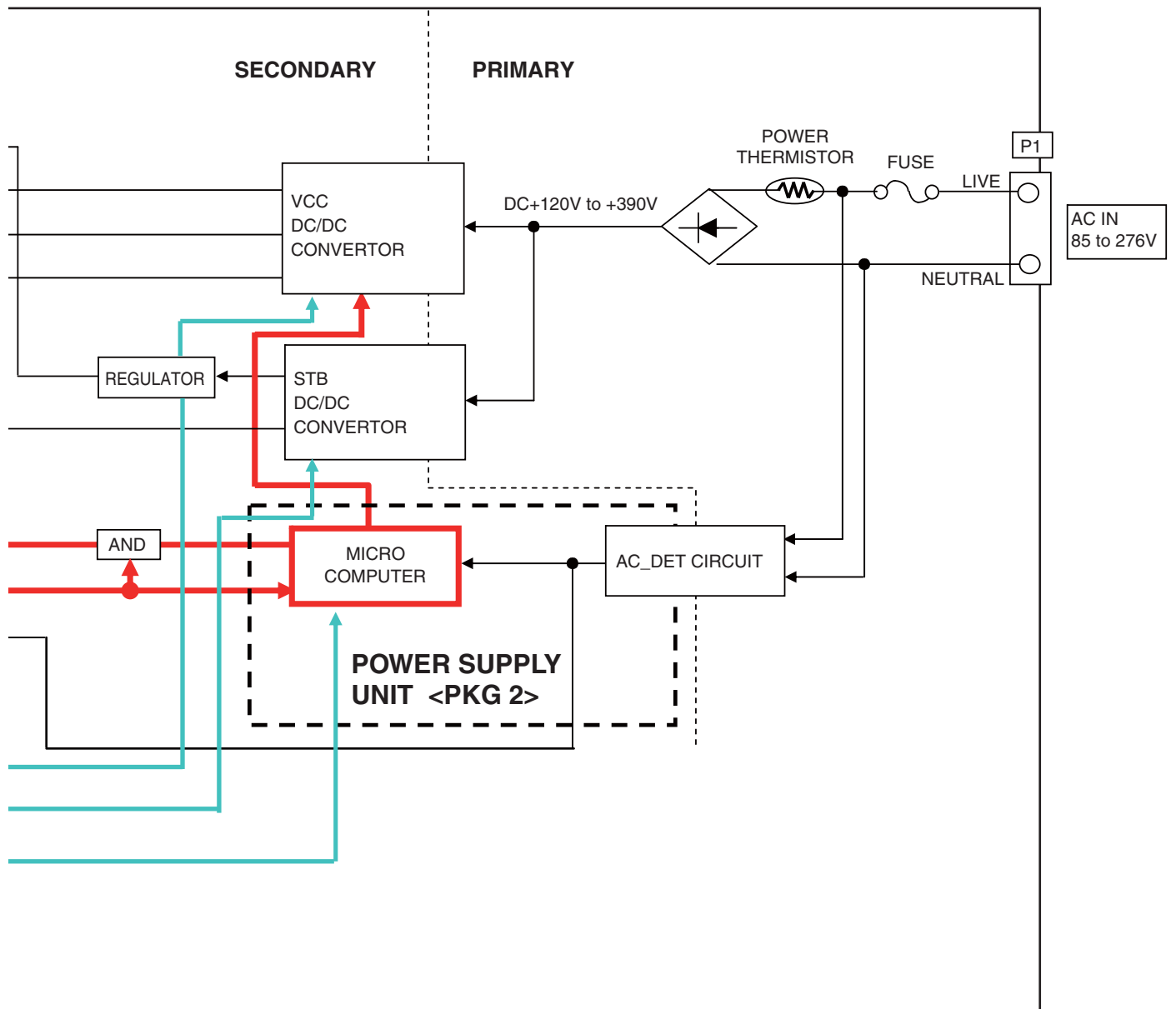
Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



[1] BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

Note:
The figure ① indicate the number of times the Red LED flashes when power-down occurs in the corresponding route.





[2] PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

How to Distinguish the PD (Power-Down)

About the LED for checking causes of power-down

No LED for checking causes of power-down is provided for the POWER SUPPLY Unit of the MR. However, by checking the waveforms at terminals of the microcomputer, whether a power-down was caused by failure in the POWER SUPPLY Unit, and if it was, which power system among the four was in failure can be inferred. The points at which to check waveforms and how to distinguish power-down causes are described below:

<Points at which to Check Waveforms>

Waveforms between Pin 3 of CN801 and GND (secondary radiator, display chassis, etc.) Refer to the section "Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup" in the "7.2 DISASSEMBLY".

<How to Distinguish>

If a power-down was caused by failure in the POWER SUPPLY Unit, a pulse waveform is output at the above-mentioned points. (It is assumed that STB3.4 V power is properly output.)

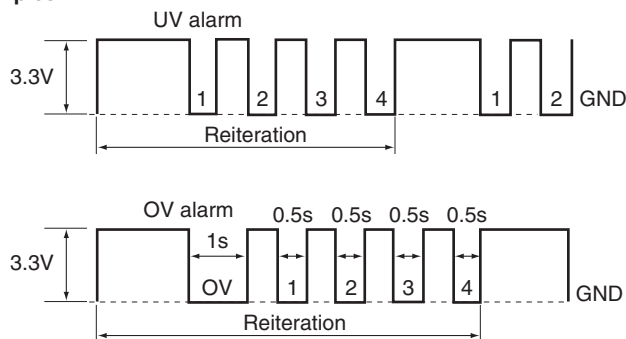
By counting the frequency of "Lo" in the pulse waveform, the cause of power-down can be identified.

Frequency of "Lo"	Cause	
	Output Voltage	Overvoltage (OV) or Undervoltage (UV)
Once	+12V	OV or UV *
Twice	+17V	OV or UV *
3 times	+6.5V	OV or UV *
4 times	Protection against overheat	

*How to distinguish OV and UV:

If the first "Lo" duration of a pulse is long (1 s), the cause is OV. As the three output voltages are electromagnetically linked and interact with one another, the frequency may vary among 1-3, depending on the type of power-down.

Examples:



How to Diagnose the PD

Frequency of LED Flashing	History Indication in Factory Mode	Assy	Cause of power-down (activated protection circuit)	Point to be Checked	Possible Defective Parts
Red, once	MR-PWR	MAIN BLOCK Assy	Overcurrent in 6.5 V power	5V_ANT-REG	IC4305, C4305
				5V_IO-REG	IC4310, C4301
				3CH-DD converter	IC4402 C4405, C4406, C4409, C4463, C4464, C4466 to C4468
				FET	Q4417, Q4416, Q4411
				1CH-DD converter	IC4501, C4517
			Overcurrent in 12 V power	FAN-REG	IC4302, C4342
				8V_IO-REG	IC4309, C4315
				LNB	IC4503
			Overcurrent in 17 V power	12V_IO-REG	IC4308, C4303
			Overcurrent in 3.4 V power	1.8V_IO-REG	IC4604, C4609 C4820, C8103
		POWER SUPPLY Unit	V+6.5V UVP	TP V+6.5V	Voltage drop due to overcurrent on the load side
			V+12V UVP	TP V+12V	Voltage drop due to overcurrent on the load side
			V+17V UVP	TP V+17V	Voltage drop due to overcurrent on the load side
			STB3.4V OCP	TP STB3.4V	C151, C153, C152, D152, or Z152, and abnormal current on the load side that is connected to STB3.4 V power
			STB5.1V OCP	TP STB5.1V	C155 and abnormal current on the load side that is connected to STB5.1 V power And abnormal current on the load side that is connected to STB5.1 V power
			VCC OCP	TP V+6.5V	D351, C351, C352, C353, and abnormal current on the load side that is connected to V+6.5V power
				TP V+12V	D352, C357, C358, and abnormal current on the load side that is connected to V+12V power
				TP V+17V	D353, C359, and abnormal current on the load side that is connected to V+17V power
			STB3.4V OVP	TP STB3.4V	PC121
			VCC OVP	TP V+6.5V TP V+12V	PC301, Breakage in the line to/from the P2 output connector
			STB3.4V TSD		Z121 control IC and abnormal current on the load side that is connected to STB3.4 V power
			V+6.5V Rectifier diode (D351) TSD		D351 or D352, and abnormal current on the load sides that is connected to V+6.5 V and V+12 V

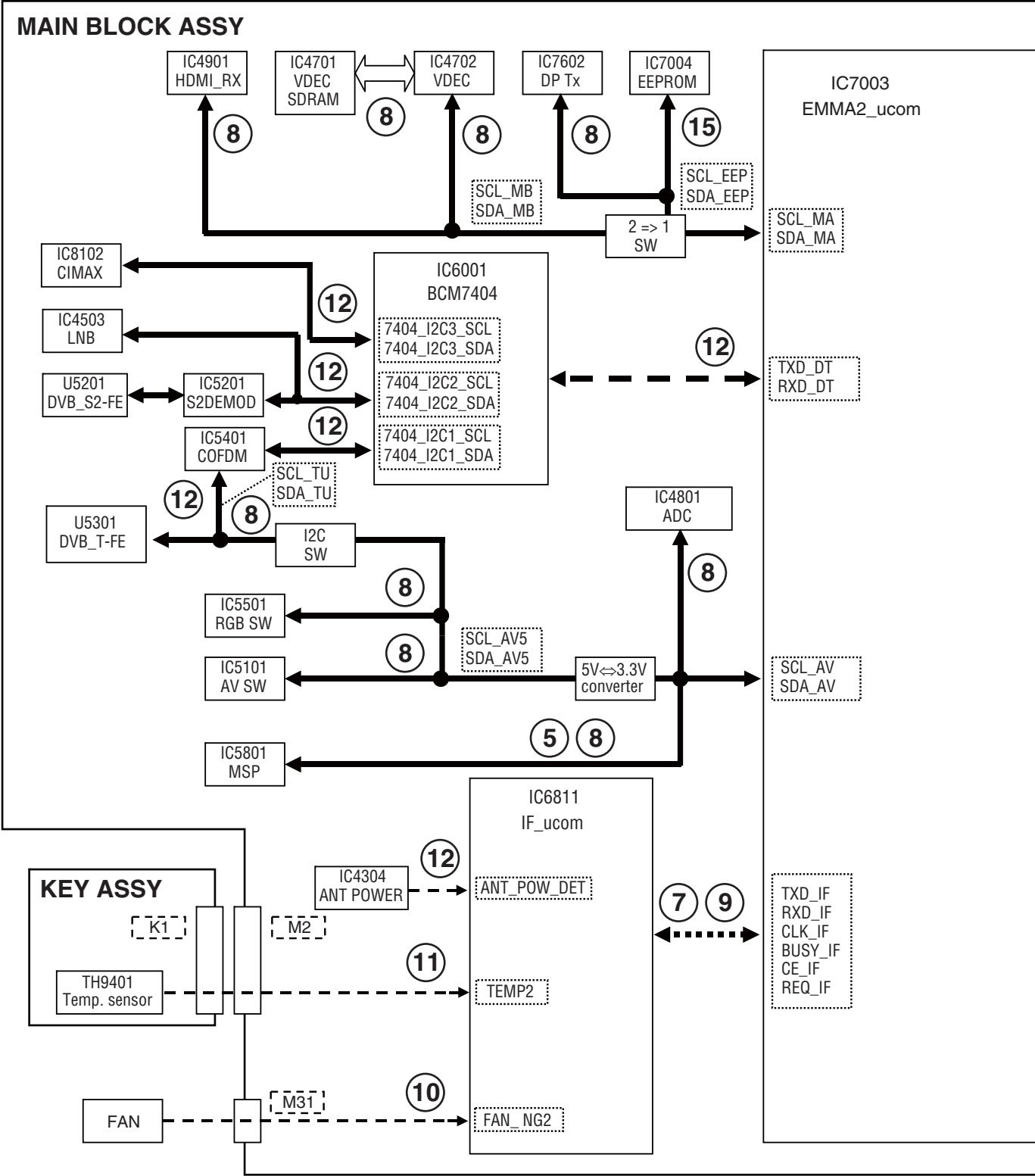
Note: Although replacement of the whole POWER SUPPLY Unit is required (replacement of only defective parts on the POWER SUPPLY Unit is not possible), the circuit symbols are described for reference

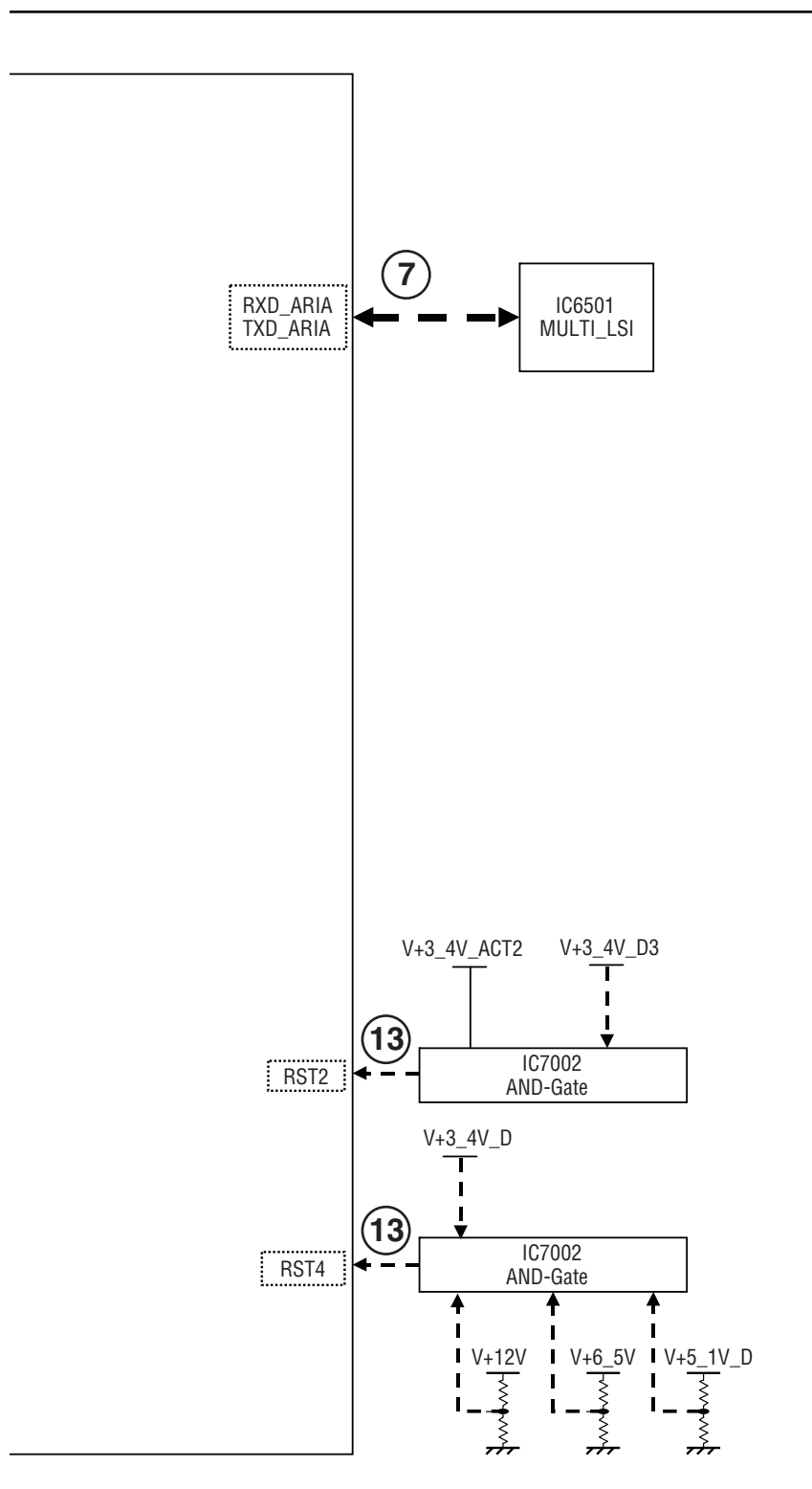
1 2 3 4

5.4 DIAGNOSIS OF SD (SHUTDOWN)

A [1] BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

Note : The figures ① to ⑮ indicate the number of times the Blue LED flashes when shut-down occurs in the corresponding route. ⑫ LED is not flashed.





[2] SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		
			MAIN	SUB	
Blue 5	Audio	Abnormality in MSP	AUDIO	MSPMAP	
Blue 7	Failure in 3-wire serial communication with the main microcomputer	IF microcomputer	MA-3L	IF	
		MULTI		MULTI	
Blue 8	Failure in IIC communication with the main microcomputer	Tuner1	MA-IIC	FE1	
		MSP/MAP		MSPMAP	
		AV Switch		AV-SW	
		RGB Switch		RGB-SW	
		Main VDEC		VDEC	
		VDEC SDRAM		SDRAM	
		AD/PLL		ADC	
		HDMI		HDMI	
Blue 9	Failure in communication with the main microcomputer	DisplayPort Tx		DP-TX	
		–	MAIN	–	
Blue 10	Abnormality in FAN	FAN2	FAN	FAN2	
Blue 11	High temperature of the unit	–	TEMP2	–	
Blue 12 (Actually, Blue 12 LED is not flashed.)	Digital Tuner	DTV start up error	DTUNER	PS/RST	
		DTV communication error		RETRY	
		DEVICE ERR		DEVICE	
		Tuner1		DE-FE	
		DTV Antenna		D-ANT	
		Application		DTVAPP	
		COFDM		DEMODO	
		Tuner S2		DE-FES	
		S2DEMODO		DEMODO	
		LNB		DE-LNB	
		S2 Antenna		S-ANT	
Blue 13	Failure in the power supply	DC-DC Converter power decrease	RST-MA	M-DCDC	
		POWER SUPPLY		RELAY	
Blue 15	Main EEPROM	Main EEPROM communication error	MA-EEP	–	

A

Checkpoint	Possible Defective Part	Remarks
Power supply for MSP and MSP	IC5801, IC4604, Q4616	Check the MSP, its power and periphery parts (e.g. reset line).
Communication line between IF and MAIN	IC7003, IC6811	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Communication line between MULTI and MAIN	IC7003, IC6501	Check the communication lines (TXD_ARIA/RXD_ARIA)
IIC communication line between Tuner and MAIN	U5301, IC7003	Check the communication lines (SCL_TU/SDA_TU or SCL_AV/SDA_AV)
IIC communication line between MSP/MAIN and MAIN	IC5801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between AV_SW and MAIN	IC5101, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between RGB_SW and MAIN	IC5501, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between M_VDEC and MAIN	IC4702, IC7003	Check the communication lines (SCL_MB/SDA_MB)
Communication line between VDEC and SDRAM	IC4701, IC4702	Check the communication lines (SDRAM), Failure in SDRAM
IIC communication line between ADC and MAIN	IC4801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between HDMI_RX and MAIN	IC4901, IC7003	Check the communication lines (SCL_MB/SDA_MB)
IIC communication line between DP_TX and MAIN	IC7602, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)
Communication line between IF and MAIN	IC6811, IC7003	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the FAN		FAN_NG
Periphery of the cable at M31		Check if cables are firmly connected.
Periphery of the fan control regulator	IC4302	Check that the voltage outputs it.
Ambient temperature		TEMP2 A shutdown occurs because of high temperature.
Temperature sensor or its periphery	TH9401	TEMP2
Periphery of the cable between M2 and K1	CN4204, CN9401	Check if cables are firmly connected.
Startup of BCM7404	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Communication line between BCM7404 and MAIN	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Periphery of the BCM7404	IC6001	
Front-end block	IC6001, U5301	Check the BCM7404, terrestrial tuner and periphery devices.
Antenna supply voltage	IC4304	Check the IC4304 (overcurrent detection IC), its periphery devices and antenna connection line.
DTV application	IC6001	
COFDM	IC5401	Check the communication line between BCM7404 and COFDM
Tuner S2	U5201	Check the communication line between S2DEMOD and F.E.
S2DEMOD	IC5201	Check the communication line between BCM7404 and S2DEMOD
LNB	IC4503	Check the communication line between BCM7404 and LNB IC, and check the periphery parts of LNB IC.
Antenna supply voltage	IC4503	Check the LNB IC and periphery parts, and antenna connection line.
RST2 V+3_4V_ACT2, V+3_4V_D3	IC7002	Check if each voltages are started.
RST4 V+12V, V+6_5V, V+5_1V_D, V+3_4V_D	IC7002	Check if each voltages are started.
V+12V, V+6_5V, V+17V	POWER SUPPLY Unit	Check if each voltages are started.
Check the cable M1	CN4203	Check if cables are firmly connected.
IIC communication line between EEPROM and MAIN	IC7004, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)

C

D

E

F

5.5 NON-FAILURE INFORMATION

[1] INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 1 or 3 to 5 signal is not correct.	The color setting for INPUT 1 or 3 to 5 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 1 or 3 to 5 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 1 or 3 is not output. No HDMI signal is input.	The audio setting for INPUT 1 or 3 is any setting, and a video signal is not input. If the audio setting is any setting, to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output.
No sound of signals to INPUT 1 or 3 to 5 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
SCART video output	
The video output signal from the SCART connector is deteriorated. Or when the video output signal from the SCART connector is recorded, its playback picture is deteriorated.	The video signal output from the SCART connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2.	The video signal is not output from the SCART connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 1 or 3 to 5.	The video signal is not output from the SCART connector when the HDMI signal is selected.
AUDIO OUT and SCART	
The image displayed on the PDP is not synchronized with the sound from the SCART.	The audio signal from the SCART connector is synchronized with the video output signal from the SCART connector. And the audio signal from the AUDIO OUT is synchronized with the video signal that is currently displayed.
DIGITAL OUT	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The digital audio output signal from the DIGITAL connector is not synchronized with that from the SCART video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the SCART video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI [excluding PC]) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
Control via the SR connector is not possible.	Wrong connection of the cable to the PC INPUT (AUDIO) connector is suspected.
The audio signal from the PC is not output.	Wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	As the signal input to the connector that has been selected on the INPUT SELECT submenu of the Home menu is selected (this does not apply to the connectors located on the side of the unit), check the menu setting. If the output signal is not available even if the input signal is properly selected, input a signal to other input functions, check the connecting cables, or check the settings for the connected equipment. Note that if cables are connected to both the HDMI connector and composite video connector of INPUT 5, the HDMI connector will have priority over the composite video connector.
The video signal to the composite video connector is not displayed.	

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4. (The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

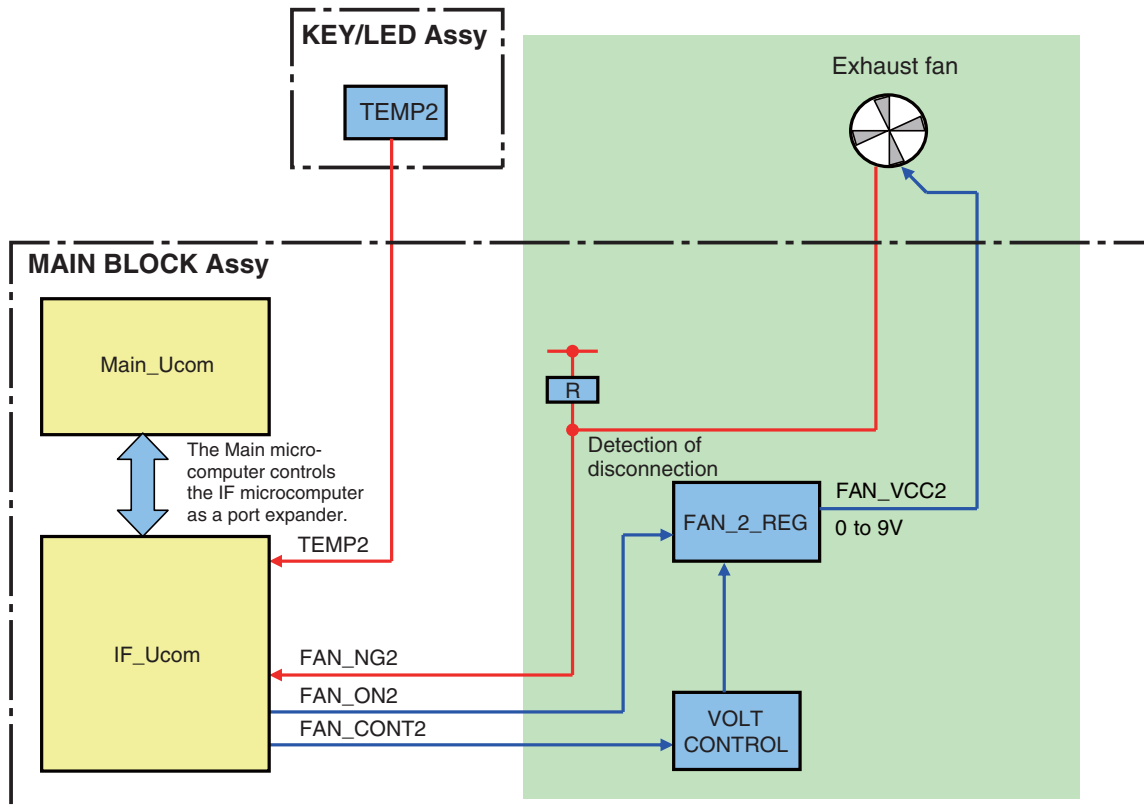
It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

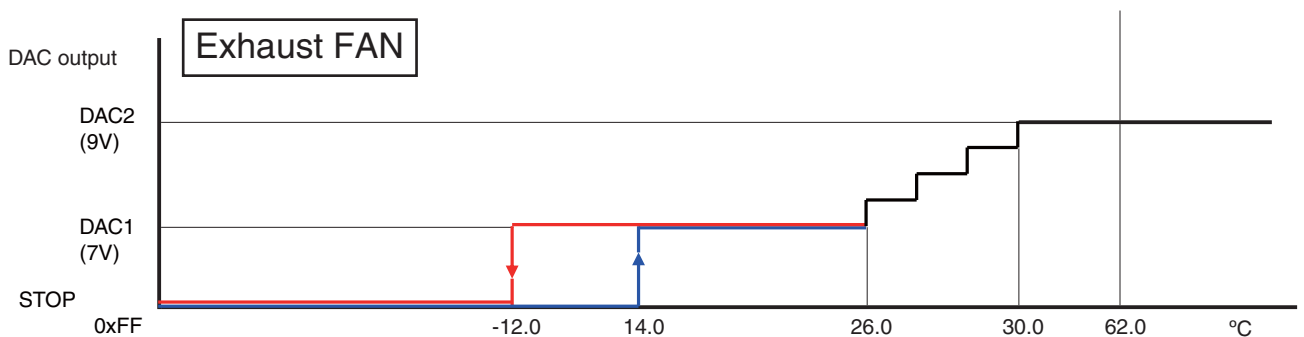
5.6 OUTLINE OF THE OPERATION

[1] SPECIFICATION OF THE FAN CONTROL

■ Block diagram



■ Operation specifications



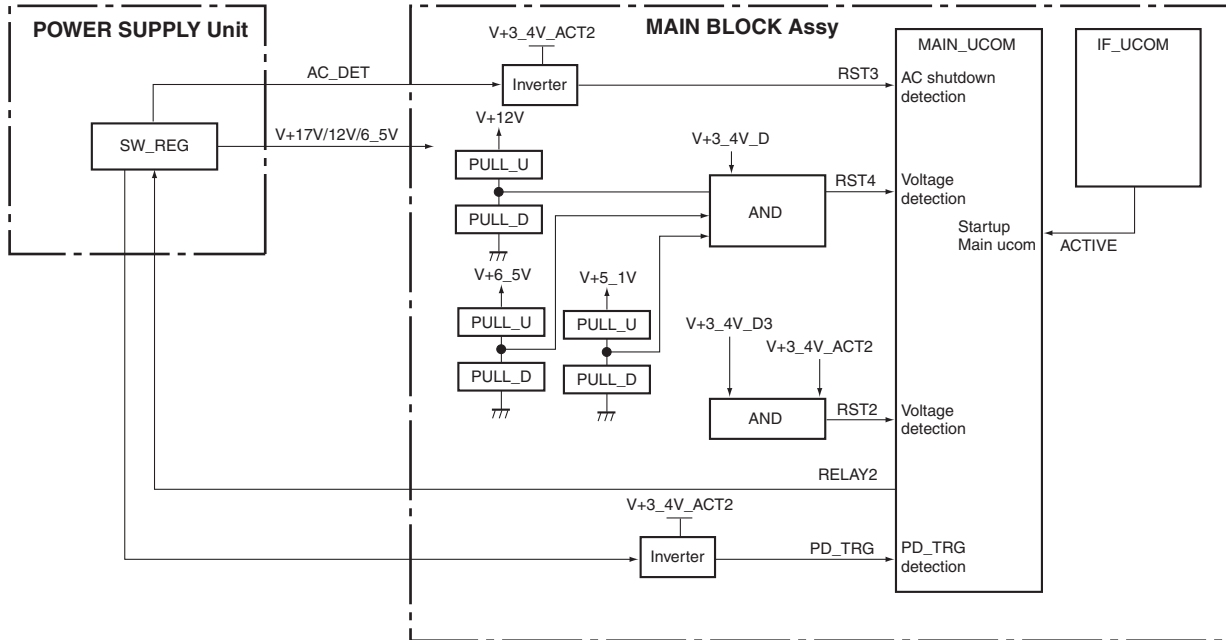
Notes:

- The operating temperature of the fan is different from the ambient temperature, because the sensor temperature is read by the microcomputer.
- The fan may not start rotating until the internal temperature of the unit reaches a certain level, such as immediately after the unit is turned on.
- When the temperature rises, the sensor voltage of TEMP2 decreases.
- When the voltage of the DAC output for exhaust FAN decreases, rotation speed of FAN rises.

[2] PROCESSING IN ABNORMALITY

Power supply and DC-DC converter

● Circuit configuration

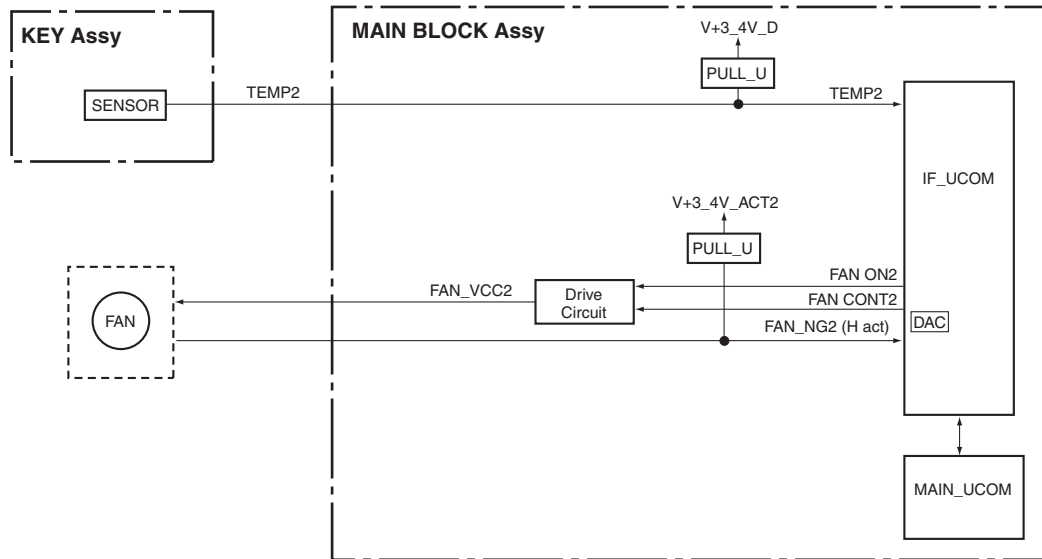


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	<ul style="list-style-type: none"> Panel screen ON (RST4 = H and PSW1 = H) While awaiting restoration of RST2 (RST2 = L) 	Shutdown occurs immediately Blue LED flashes 13 times
RST3	—	—	Excepting passive standby	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, and monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY2 is ON. or for 2 sec while the unit is ON or in Functional STB.	RELAY2 = ON (High)	Shutdown occurs immediately Blue LED flashes 13 times
PD_TRG	VCC power (MR-PWR)	Shutdown occurs when the signal is continuously "L" for 30msec * 3 times after RELAY2 is ON.	<ul style="list-style-type: none"> RELAY2 = ON Monitor it after 3 sec. 	Power-down occurs immediately Red LED flashes once

Fan and temperature sensor

● Circuit configuration

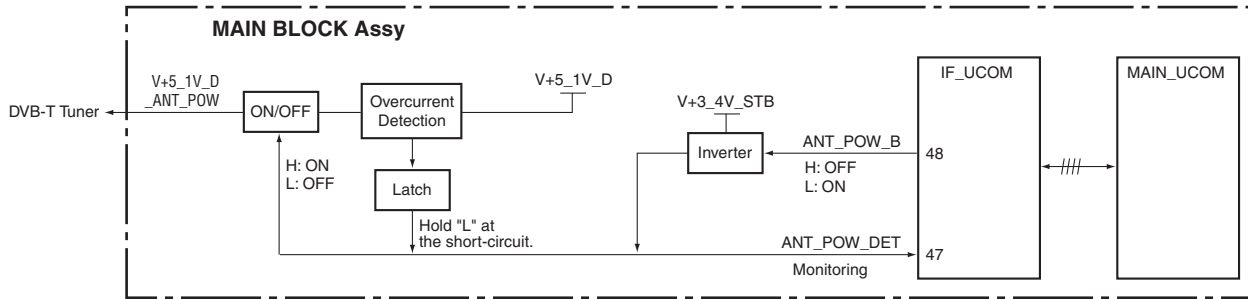


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
FAN_NG2	FAN	Shutdown occurs when the signal is "H." 1 S * 3 times	RST4 = H and FAN_ON2 = H (Monitoring starts 3 sec after the above conditions are established.)	Shutdown occurs immediately Blue LED flashes 10 times
TEMP2	High temperature at MR	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times	RST4 = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. In the Functional STB: Shutdown occurs immediately Blue LED flashes 11 times

Power supply for DVB-T Antenna for Europe

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
ANT_POW_DET	DTB antenna short-circuited	Warning message is displayed when the signal is L (100 mS, 3 times)	RST4 = H and ANT_POW_B = L (Monitoring starts 1 sec after the above conditions are established.)	Output of a warning message for 60 sec.

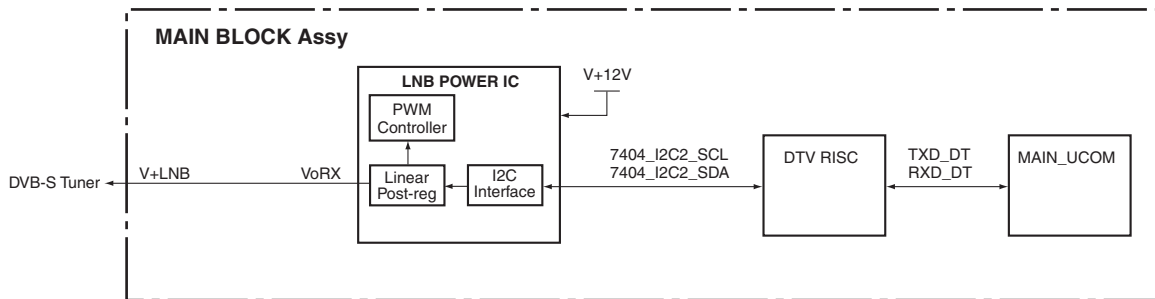
● Conditions of circuit reset

The circuit can be reset by unplugging then plugging the power cord back in (it will not be reset by Standby ON/OFF).

Power supply for DVB-S Antenna for Europe

● Circuit configuration

Note: Specifications for the output of warning-message indication will be added in the future.



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
—	S2 antenna short-circuited	Notification from DTV (at 7404_I2C2, OR of OLF bit and OTF bit of the LNB IC System Register is 1)	RST4: "H" and during reception of satellite broadcast	Output of a warning message for 60 sec. Only while a satellite broadcast program is displayed on the main screen.

● Conditions of circuit reset

The circuit will be automatically reset after an error, such as short-circuiting of the antenna, is resolved and the unit is restored.

[3] HOW TO OPERATE THE MEDIA RECEIVER SEPARATELY

● Necessary items for operation

- Media Receiver
- DP-to-HDMI conversion jig: GGF1627 (with the AC adaptor)
AC adaptor INPUT: 100 V to 240 V, 50/60 Hz, 0.3 A
OUTPUT: DC 6 V, 1.8 A $\ominus \text{---} \text{---} \oplus$
- Monitor or TV (with which an image with resolution of 1920 × 1080 p, 60 Hz can be displayed, with HDMI input)
Note: When checking with DVI monitor, setting change of this jig is required.
- DP cable (GGP1117) and HDMI cable
- G8 or G9 remote control unit (in case of controlling by remote control unit)
- PC and RS-232C straight cable (in case of controlling by PC)
- HDMI -DVI cable (in case of connecting with DVI monitor)

● Connection

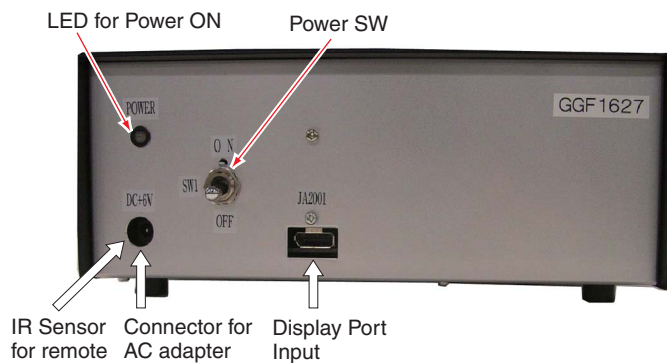


Fig.1 DP - HDMI Conversion tool (Front side)

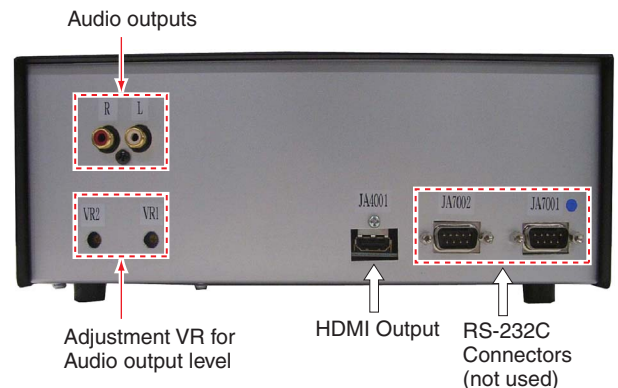


Fig.2 DP - HDMI Conversion tool (Rear side)

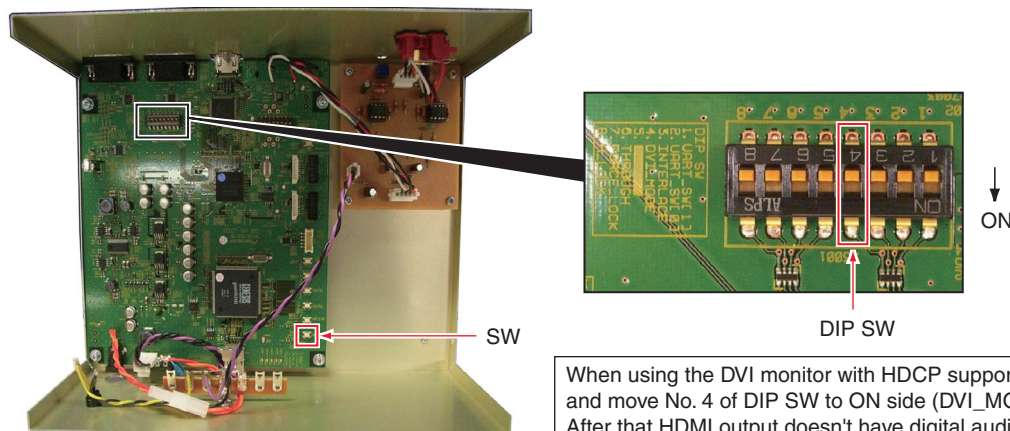


Fig.3 DP - HDMI Conversion tool
DIP SW Setting (output mode setting for HDMI connector)

A

● Preparation

- Set the MR from System Operation mode to Standalone Operation mode.
The MR is normally set to System Operation mode. If the MR is turned on in this mode, an error warning is issued (the red and blue LEDs alternately flash), and it cannot be operated properly.

To change to Standalone Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on. (The red and blue LEDs alternately flash to warn of an error.)
2. In this state, send the MRMS01 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL - key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

C

● Operation

After the setting in Preparation is completed, turn the units on in the following order then perform analysis:

1. Turn the monitor or TV on. (Set the input mode to HDMI.)
2. Turn the DP-to-HDMI conversion jig on.
3. Turn the MR on.

If no image is displayed on the monitor or TV after the MR is turned on, press and hold the switch on the DP-to-HDMI conversion jig for about 1 sec.

● How to control the MR

- With the remote control unit:
The infrared receiver (IR) sensor for remote control unit is placed inside of the jig. Please point the remote towards the AC adaptor connector on the jig.
Unlike normal products, sensor reception of this tool is not so sensitive due to reduce interference with another Pioneer Plasma TV.
Please keep the distance between the remote control unit and the sensor less than 15cm.
- With RS-232C commands:
Connect a PC to the MR via their RS-232C ports and send RS-232C commands from the PC. (Baud rate: 9600 bps)

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● After analysis is finished

After analysis in Standalone Operation mode is finished, before returning the MR to the customer, be sure to return the unit to System Operation mode, as shown in the procedures below.

If it remains in Standalone Operation mode, when it is connected with the customer's monitor, the monitor will detect a connection error and not operate properly, and no image will be displayed.

To set the MR to System Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on.
2. Send the MRMS00 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in System Operation mode.

4. Connect the MR directly with the monitor and check that they operate properly.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL + key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

● Products whose proper operation has been proved when HDMI connection is performed with this MR

Model Number	Manufacturer	Built-in Audio AMP
PDP-5000EX	Pioneer	○ (SP is required)
G8	Pioneer	○ (SP is required except 42 inch)
FP241WJ	BenQ	× (External audio amp and SP is required)
3008WFP	DELL	× (External audio amp and SP is required)
HD2441W	EIZO NANAO	× (External audio amp and SP is required)

● Attention point for audio volume

Audio output level is connected with MR volume level. If VR level of a MR is normal (around 10 - 15) and displayed HDMI TV or audio AMP is not so high level, sound level is very low. Please turn up the volume to appropriate level either or both units.

In case of turning up volume of MR to very high level during testing, turn down it to normal level and then turn off the unit. Otherwise when connecting the MR with panel, very loud sound is output from speakers and it might be a danger.

● Attention point when using another Pioneer Plasma TV

Please pay attention to interference of IR signal when using Pioneer plasma TV as HDMI monitor.

If remote signal is also received to Pioneer plasma TV when operating MR with this tool and remote, you might confuse of which unit is controlled by the remote.

The following methods are some of suggestions to control only MR with the conversion tool.

Using the remote control unit and the conversion tool (AC adaptor connector) as nearly as possible hiding remote sensor of the plasma TV temporally.

● Setting Method to connect with DVI monitor with HDCP support (DVI mode)

1. Open bonnet with power off condition.
2. Refer to Fig. 3, move the DIP SW No. [4] to ON side.
After this setting, DVI mode signal is output from HDMI output connector of HDMI.

Note: 1. Some of DVI monitors might not display output signal from this conversion tool.
2. Output signal does not contain digital audio signal.

5.7 OUTLINE OF RS-232C COMMAND

A

[1] PREPARED TOOLS

- It is necessary to prepare the following one to use 232C command.
- PC
 - Application for control
 - 232C cable (straight)
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

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[2] USING RS-232C COMMANDS

Individual ports are provided for RS-232C and SR+ connectors with this model. Therefore, unlike the case of previous models, which required switching of exclusive operation between these connectors on the Integrator menu, switching is no longer required.

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5.8 LIST OF RS-232C COMMANDS

RS-232C command list

Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
A					
AMT	S00	Audio mute OFF			
	S01	Audio mute ON			
C					
CHN	FWD	Changing tuner preset channel (1 step forward)			
	REV	Changing tuner preset channel (1 step reverse)			
CHM		Clearing data of the hour meter		●	Last memory is performed to the panel side.
CHR		Clearing data of the hour meter of MTB/MR side			Clear the hour meter of screen display of MAIN NG.
CNG		Clearing data of the SD history of MTB/MR side			
D					
DPT		Rewriting the Display Port Tx			
DW*		To subtract * to the adjustment value (* = 0 to 9, subtract 10 with DW0 and set to minimum value with DWF)			
F					
FAN		Factory mode: OFF		●	
FAY		Factory mode: ON			
FST	S35	Set each memory setting of MTB/MR side to the shipment state.		●	
I					
INA	***	Switching the terrestrial analog signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial analog signal (Channnel is in the last.)	MAIN		
INC	***	Switching the terrestrial digital signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial digital signal (Channnel is in the last.)	MAIN		
IND	***	Switching the satellite digital signal, direct tuning (***: channel number)	MAIN		
		Switching the satellite digital signal (Channnel is in the last.)	MAIN		
INH		Switching the Home Media Gallery / Home Gallery			
INP	S01	Input: INPUT1	MAIN		
	S02	Input: INPUT2	MAIN		
	S03	Input: INPUT3	MAIN		
	S04	Input: INPUT4	MAIN		
	S05	Input: INPUT5	MAIN		
	S06	Input: INPUT6 (PC)	MAIN		
M					
MRM	S00	Setting the mode to normal operation	MAIN	●	
	S01	Setting the mode to standalone operation	MAIN	●	
MST	S00	Display one screen			
	S01	PsideP (Main size: normal)			
	S02	PinP (Right down)			
	S03	PinP (Right up)			
	S04	PinP (Left down)			
	S05	PinP (Left up)			
	S08	SWAP (Exchanging sub-screen)			
O					
OSD	S00	OSD setting: OFF	MAIN		
	S01	OSD setting: ON	MAIN		
P					
POF		Power: OFF	MAIN		
PON		Power: ON	MAIN		
PUC	S00	PURE CINEMA: OFF	MAIN	●	
	S01	PURE CINEMA: Standard	MAIN	●	
	S02	PURE CINEMA: Advance	MAIN	●	
	S03	PURE CINEMA: Smooth	MAIN	●	
Q					
QMT		Acquiring temperature of MTB/MR side and Fan speed			
QNG		Acquiring shutdown information of MTB/MR side			
QS1		Acquiring unit data, such as the software version			
QSE		Acquiring unit data, such as the software version of MTB/MR side (specific destination)			

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Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
S					
SDF	S00	SRS DEFINITION: OFF			
	S01	SRS DEFINITION: DEFINITION1			
	S02	SRS DEFINITION: DEFINITION2			
	S03	SRS DEFINITION: DEFINITION3			
SML	***	Adjustment of the side mask level	MAIN	●	
SRS	S00	SRS: OFF			
	S01	SRS: SRS1			
	S02	SRS: SRS2			
	S03	SRS: SRS3			
SZM	S00	Setting the screen size to Dot by Dot	MAIN		
	S01	Setting the screen size to 4 :3	MAIN		
	S02	Setting the screen size to FULL or FULL 1080i	MAIN		
	S03	Setting the screen size to ZOOM	MAIN		
	S04	Setting the screen size to CINEMA	MAIN		
	S05	Setting the screen size to WIDE or WIDE1	MAIN		
	S06	Setting the screen size to FULL 14:9	MAIN		
	S07	Setting the screen size to CINEMA 14:9	MAIN		
	S11	Setting the screen size to AUTO	MAIN		
	S12	Setting the screen size to WIDE2	MAIN		
T					
TBS	S00	TRUBASS: OFF			
	S01	TRUBASS: TRUBASS1			
	S02	TRUBASS: TRUBASS2			
	S03	TRUBASS: TRUBASS3			
U					
UP*		To add * to the adjustment value (* = 0 to 9, add 10 with UP0 and set to maximum value with UPF)			
V					
VOL	UP*, DW*, ***	To adjust the volume			Use this command by designating the adjustment value *** (=000 to 060).
Z					
ZME	***	Initializing the video EEPROM data of the MTB/MR side		●	

[2] QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	Return data: 3 (ECO) + 32 (DATA) + 2 (CS) = 37 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSE
1	Check flag for production	1 byte	E
2	Reserved	3 byte	***
3	DTB hardware version	4 byte	0342
4	User setting password	4 byte	1234
5	DP Tx firmware version	16 byte	123456789ABCDEFGH
6	DP Tx hardware version	4 byte	ABCD
CS	Check Sum	2 byte	13

[3] QMT (STATUS INFORMATION OF MTB/MR SECTION)

Temperature information on the MTB/MR section is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QMT]	Every time	Output of status	Return data: 3 (ECO) + 8 (DATA) = 11 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QMT
1	A/D value of temperature of MTB/MR section	3 byte	276
2	Reserved (*1)	1 byte	1
3	Reserved	4 byte	****

*1 Although the numerics 0, 1, and 2 can be input, those input values are invalid.

[4] QNG (SHUTDOWN INFORMATION OF MTB SECTION)

The command QNG is for acquiring the data from the 8 latest shutdown (SD) logs of the MTB section.

Command Format	Effective Operation Modes	Function	Remarks
[QNG]	Every time	To acquire data on the shutdown (NG) logs of MTB side	Return data: 3 (ECO) + 96 (DATA) + 2 (CS) = 101 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QNG
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the MTB hour meter for the latest SD	7 byte	0752013
4	Reserved	3 byte	000 fixed
5	Second latest SD data	1 byte	5
6	Second latest SD subcategory data	1 byte	1
7	Data from the MTB hour meter for the second latest SD	7 byte	0495204
8	Reserved	3 byte	000 fixed
9	Third latest SD data	1 byte	A
10	Third latest SD subcategory data	1 byte	2
11	Data from the MTB hour meter for the third latest SD	7 byte	0365814
12	Reserved	3 byte	000 fixed
13	Fourth latest SD data	1 byte	5
14	Fourth latest SD subcategory data	1 byte	0
15	Data from the MTB hour meter for the fourth latest SD	7 byte	0256612
16	Reserved	3 byte	000 fixed
17	Fifth latest SD data	1 byte	7
18	Fifth latest SD subcategory data	1 byte	2
19	Data from the MTB hour meter for the fifth latest SD	7 byte	0105628
20	Reserved	3 byte	000 fixed
21	Sixth latest SD data	1 byte	B
22	Sixth latest SD subcategory data	1 byte	0
23	Data from the MTB hour meter for the sixth latest SD	7 byte	0003009
24	Reserved	3 byte	000 fixed
25	Seventh latest SD data	1 byte	C
26	Seventh latest SD subcategory data	1 byte	1
27	Data from the MTB hour meter for the seventh latest SD	7 byte	00002A9
28	Reserved	3 byte	000 fixed
29	Eighth latest SD data	1 byte	C
30	Eighth latest SD subcategory data	1 byte	4
31	Data from the MTB hour meter for the eighth latest SD	7 byte	0000012
32	Reserved	3 byte	000 fixed
CS	2 Byte	2 Byte	7D

A

< SD Information No. >

Frequency *	Shutdown Factor	Remarks (Operation)
1	Failure of Power Supply of VCC	Immediately Shutdown
5	Abnormality in MSP	Go to No. 5 Subcategory Information
6	Failure of communication with Module microcomputer	Immediately Shutdown
7	Failure in 3-wire serial communication of Main microcomputer	Go to No. 7 Subcategory Information
8	Failure in IIC communication of Main microcomputer	Go to No. 8 Subcategory Information
9	Failure in Communication of Main microcomputer	Immediately Shutdown
10(A)	Abnormality in FAN	Go to No. 10 Subcategory Information
11(B)	Abnormality in high temperature	Immediately Shutdown
12(C)	Failure in Digital Tuner	Go to No. 12 Subcategory Information
13(D)	Failure in Power Supply at MTB section	Go to No. 13 Subcategory Information
15(F)	Failure in Main EEPROM	Immediately Shutdown

B

*: Indicates the frequency of Blue LED flashing when the shutdown is occurred.

C

< No. 5 Subcategory Information on "Shutdown signal from D-Amp./short-circuit of speaker terminal" >

Value	Shutdown Factor	Remarks (Operation)
3	MSPMAP	Immediately Shutdown

< No. 7 Subcategory Information on "Failure in 3-wire serial communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Communication error of IF microcomputer	Immediately Shutdown
2	Communication error of ARIA	Immediately Shutdown

D

< No. 8 Subcategory Information on "Failure in IIC communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Tuner 1	Immediately Shutdown
2	MSP/MAP	Immediately Shutdown
3	AV-Switch	Immediately Shutdown
4	RGB-Switch	Immediately Shutdown
5	Main VDEC	Immediately Shutdown
6	VDEC-SDRAM	Immediately Shutdown
7	AD/PLL	Immediately Shutdown
8	HDMI	Immediately Shutdown
9	DisplayPortTx	Immediately Shutdown
B	US-MAP	Immediately Shutdown
C	GCR	Immediately Shutdown
D	COFDM	Immediately Shutdown

E

< No. 10 Subcategory Information on "Abnormally in FAN" >

Value	Shutdown Factor	Remarks (Operation)
1	FAN 1	Immediately Shutdown
2	FAN 2	Immediately Shutdown

< No. 12 Subcategory Information on "Failure in Digital Tuner" >

Value	Shutdown Factor	Remarks (Operation)
1	Starting error of the digital tuner	Communication stop
2	Communication error with the digital tuner	
3	DTB device error	
4	Abnormally in BCM7038	
5	Fugue	
6	Audio Chip	
7	Tuner 1/Tuner 1 or 2	
8	Card I/F IC	
9	VBI Slicer	
B	Flash	
C	EEPROM	
D	EEPROM	
F	DTV Antenna	
G	Home Gallery	
I	Application	
J	DEMODO(US)/COFDM(EU)	
K	Tuner 2	
L	S2DEMODO	
M	LNB	
O	DTB ERROR	
P	Abnormally in DTB (S2) antenna	

F

< No. 13 Subcategory Information on "Failure in Power supply at MTB section" >

Value	Shutdown Factor	Remarks (Operation)
1	RST 2	Immediately Shutdown
2	RST 4	Immediately Shutdown

[5] FAY/FAN (ADJUSTMENT COMMANDS PERMISSION/PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section "6.1 [3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE".
[FAN]	During FAY	Adjustment command is invalid.	

1234

6. SERVICE FACTORY MODE

6.1 DETAILS OF THE SERVICE FACTORY MENU

A

Operations during Service Factory mode are described here.

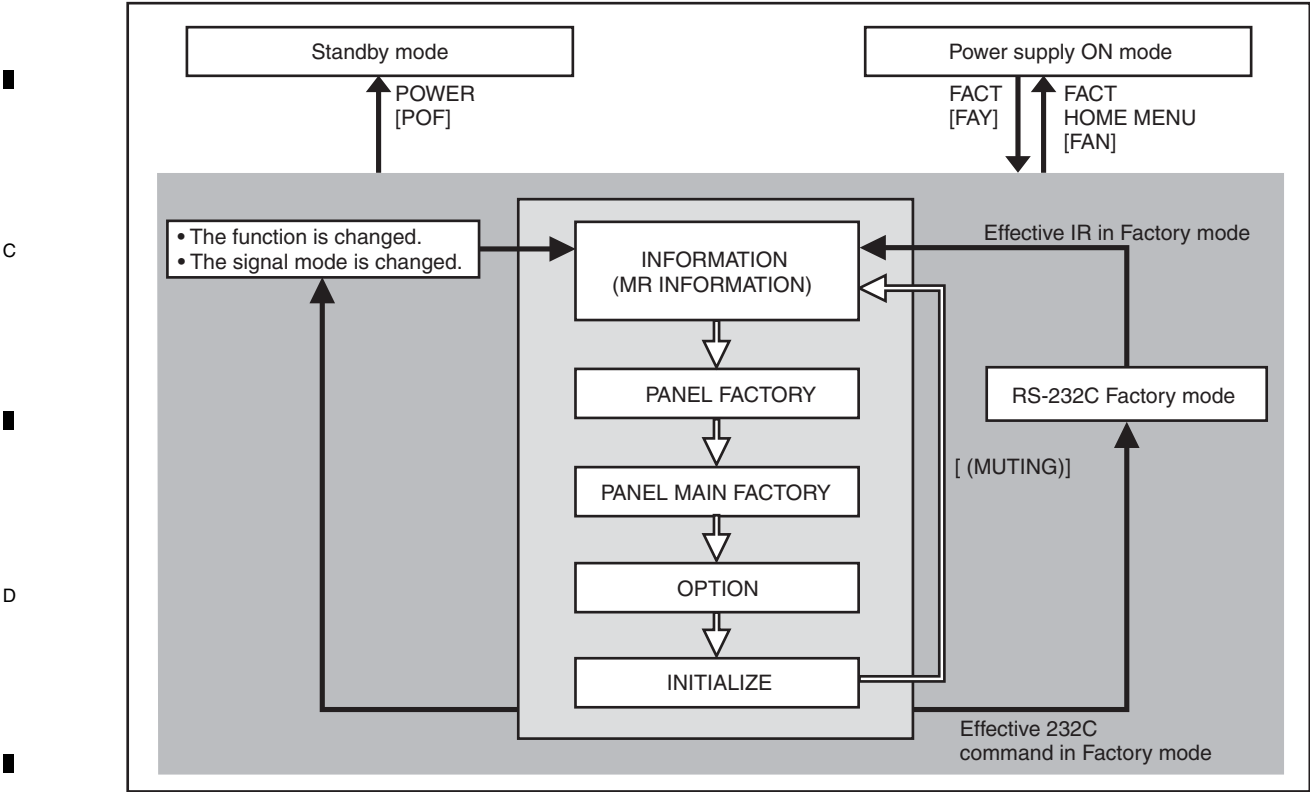
Before entering Factory mode of the PDP, make sure that the "HD AV Converter" setting on the PDP menu is set to "Disable." If it is set to "Enable," change it to "Disable" then enter Factory mode.

To confirm the "HD AV Converter" setting on the PDP menu, proceed as follows:
Select HOME MENU, Option, then HD AV Converter in HDMI Control Setting.

Note: If "HD AV Converter" is set to "Enable," the video/audio signals will not be displayed/output even if external equipment is connected via input connectors other than INPUT 4 of the PDP.

B

[1] SERVICE FACTORY MODE TRANSITION CHART



E

[2] HOW TO ENTER/EXIT SERVICE FACTORY MODE

- **How to enter Service Factory Mode**
By using a PDP service remote control)
• PDP service remote control : Press [FACTORY] key.
By issuing RS-232C commands)
• During normal Standby mode : Issue [PON] then [FAY].
• During normal operation mode : Issue [FAY].
- **How to exit Service Factory Mode**
By using a PDP service remote control)
• PDP service remote control : press [FACTORY] key.
• Supplied remote control unit : press [HOME MENU] key.
By issuing RS-232C commands)
• Issue [FAN].
- **How to enter Service Factory Mode by Using the supplied Remote Control Unit**
• From this model, can not enter the Service Factory Mode by operating the supplied remote control unit keys.
- F

[3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

■ Functions whose setting are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the "FAY" command is received) :

Function	Remarks
2-Screen Operation	Input function set on the main side is selected.
FREEZE	
Auto size, Side Mask	It is not performed during Factory mode.
ORBITER, Mask control	Central value operation (ORBITER)
Sleep Timer	Cancel the operation.
Room light sensor	Turn off the detecting operation (Setting data will be retained.)
Blue LED dimmer	Turn off the operation (Setting data will be retained.)
Setting of Parental Control	When this is turned off, the block of the screen is released.
Power Control	Turn off the operation (However, the setting maintains it.)
Image Position	Central value operation

Note: Enter the factory after cancelling ACI because the ACI operation setting OFF and not done.

■ User data

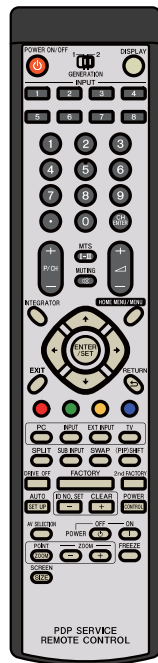
User data will be treated as follows :

- User data on picture-quality and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- User-setting data will be applied to the various settings (items on the menus), signal formats, and the items that are associated with path change (HDMI settings, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size). Are reset to the default values (data stored in memory will be retained). Screen size will be retained.

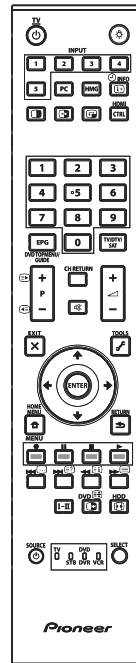
[4] REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
↓ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
← (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 5)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Factory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



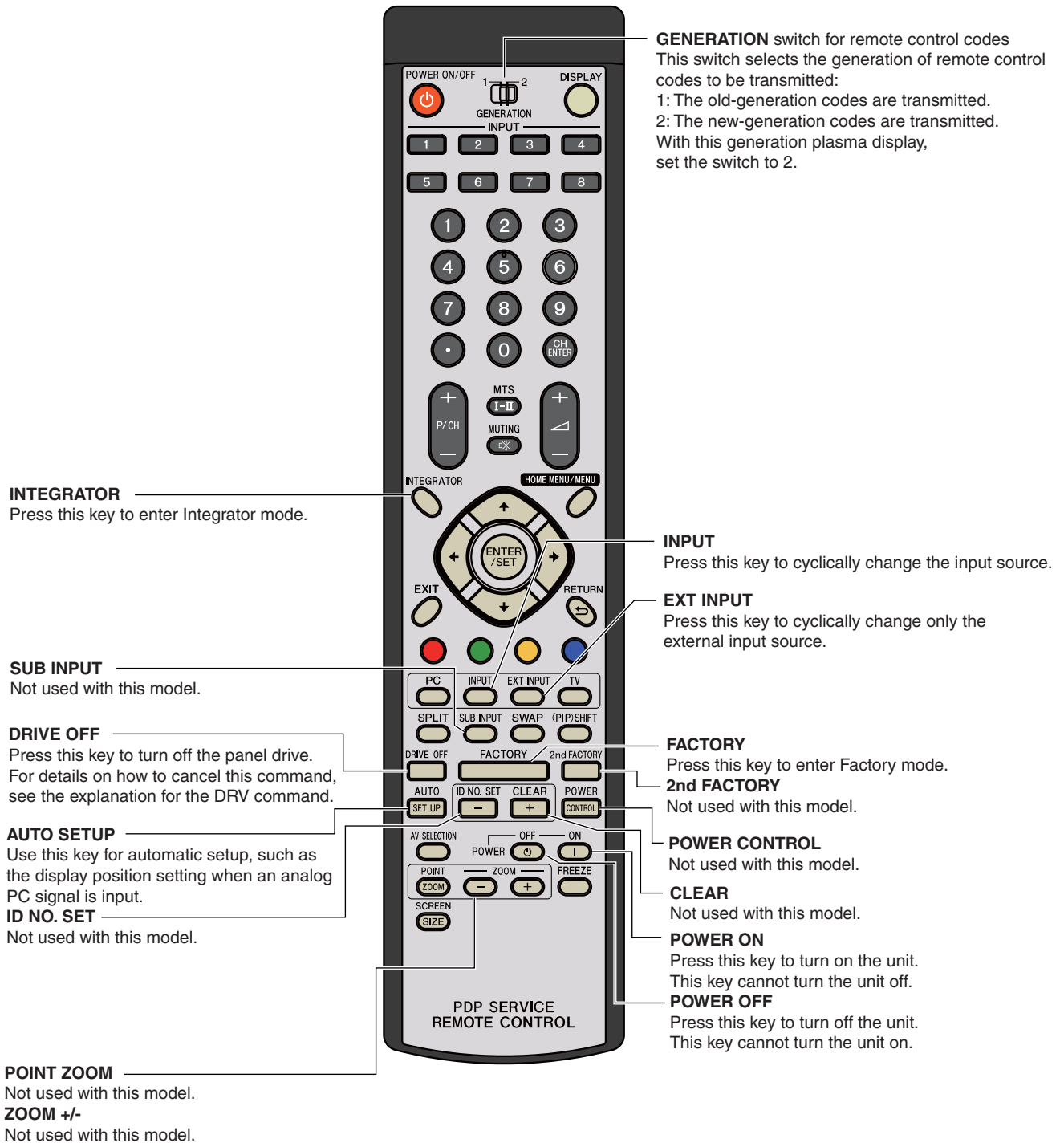
PDP service
remote control



Supplied
remote control

[5] PDP SERVICE REMOTE CONTROL

- The keys labeled with the same names on the service remote control unit have the same functions as those of the supplied remote control unit. (See "2.3 PANEL FACILITIES.")
- For the keys not provided on the supplied remote control unit, see the explanations below:



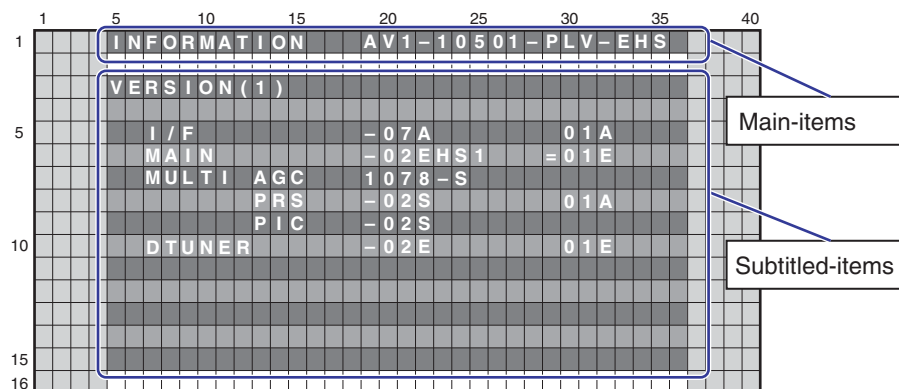
[6] FACTORY HIERARCHICAL TABLE

Large Item		Variable / Adjustment Range	Remarks
Middle Item	Small Item		
6.2 [1] INFORMATION			
[1-1] VERSION (1)			
[1-2] VERSION (2)			
[1-3] VERSION (3)			
[1-4] MAIN NG	CLEAR <=>	NO <=> YES	
[1-5] TEMPERATURE			
[1-6] HOUR METER	CLEAR <=>	NO <=> YES	
[1-7] HDMI SIGNAL INFO 1			
[1-8] HDMI SIGNAL INFO 2			
[1-9] VDEC SIGNAL INFO 1			
[1-10] VDEC SIGNAL INFO 2			
6.2 [2] PANEL FACTORY (+) (*2)			
[2-1] PANEL INFORMATION			
[2-2] PANEL WORKS			
[2-3] POWER DOWN			
[2-4] SHUT DOWN			
[2-5] PANEL-1 ADJ (+)			
[2-6] PANEL-2 ADJ (+)			
[2-7] PANEL FUNCTION (+)			
[2-8] ETC (+)			
[2-9] RASTER MASK SETUP (+)			
[2-10] PATTERN MASK SETUP (+)			
[2-11] COMBI MASK SETUP (+)			
6.2 [3] PANEL MAIN FACTORY (+) (*2)			
[3-1] PM NG INFO			
[3-2] PM STATE INFO			
[3-3] DP_RX INFO			
[3-4] PM_SETUP (+)			
6.2 [4] OPTION			
[4-1] CH PRESET <=>		DISABLE <=> ENABLE	Exclusively used for production line
[4-2] Digital AFT <=>		DISABLE <=> ENABLE	Exclusively used for production line
[4-3] SYNC DET (+)			for the technical analysis
[4-4] CTI (+)			for the technical analysis
6.2 [5] INITIALIZE			
[5-1] SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>		
[5-2] FINAL SETUP	DATA RESET <=>	NO <=> YES	
[5-3] DTB SERVICE MODE	MODE SHIFT <=>	NO <=> YES	for the technical analysis (*1)
[5-4] Wide XGA AUTO <=>		DISABLE <=> ENABLE	for the technical analysis
[5-5] AUTO ADJUST. <=>	AUTO ADJUST. <=>	NO <=> YES	

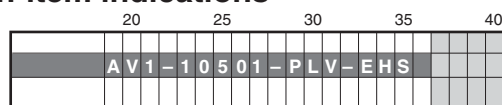
(*1): Exit the Service Factory Menu and enter the Digital Tuner Service menu.

(*2): For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[7] INDICATIONS IN SERVICE FACTORY MODE



Main-item indications



① Input function

Input Functions	OSD
AV 1 to 5	AV 1 to 5
Terrestrial Wave (Analog)	AIR
Terrestrial Wave (Digital)	ARD
Satellite digital broadcasting	SAT
Cable (Digital)	CBD
Home Media Gallery	HMG
PC	PC

② SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

③ Color system and Signal type

Color System and Signal Type	OSD	
	At Composite Input	At S-connector Input
NTSC	NTV	NTS
PAL	PLV	PLS
PAL M	PMV	PMS
PAL N	PNV	PNS
PAL 60	P6V	P6S
SECAM	SCV	SCS
4.43 NTSC	4NV	4NS
BLACK/WHITE	BWV	BWS
Y/CB/CR	CBR	
Y/PB/PR	PBR	
RGB	RGB	
Digital Video signal	DIG	

④ Option (Destination, Panel Generation, etc.)

Options	OSD
KRP-500P/WYSIXK5	EHS
KRP-600P/WYSIXK5	

A

② SIG Mode and Screen size (by User is displayed)

1st and 2nd characters : Resolution of the input signal

3rd and 4th characters : Refresh rate of the input signal

5th character : Selection of the screen size

B

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.750
	60	SDTV*525i	60.000	15.750
20	50	SDTV*625p	50.000	31.500
	60	SDTV*525p	60.000	31.500
30	50	HDTV*1125i	50.000	33.750
	60	HDTV*1125i	60.000	33.750
40	50	HDTV*750p	50.000	45.000
	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
	50	HDTV*1125p	50.000	56.250
	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

C

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

D

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	●	—	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	
9	WIDE1	●	—	
A	WIDE2	●	—	

●: supported, —: unsupported

F

6.2 DETAILS OF THE FACTORY MENU

[1] INFORMATION

■ Operation items

No.	Function	Content	RS-232C Command
[1-1]	VERSION (1)	The Flash memory versions for each device are displayed.	QS1
[1-2]	VERSION (2)	The Flash memory versions for each device are displayed.	QSE
[1-3]	VERSION (3)	The Flash memory versions for each device are displayed.	QSB
[1-4]	MAIN NG	The Shutdown NG information and Event Times in the MTB section are displayed.	QNG
[1-5]	TEMPERATURE	The present temperature and the FAN rotating status are displayed.	—
[1-6]	HOUR METER	The accumulation power ON count of the panel is displayed.	—
[1-7]	HDMI SIGNAL INFO 1	The status registers of HDMI receiver are displayed with hexadecimal.	—
[1-8]	HDMI SIGNAL INFO 2		
[1-9]	VDEC SIGNAL INFO 1	Display the signal information input to VDEC.	—
[1-10]	VDEC SIGNAL INFO 2		

[1-1] VERSION (1)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
I/F	I/F microcomputer	-07A	01A
MAIN	Main microcomputer	-02EHS1	=01E
MULTI AGC	AGC data of Multi processor	1078-S	
MULTI PRS	Program of Multi processor	-02S	01A
MULTI PIC	Picture quality data of Multi processor	-02S	
DTUNER	Software program of the Digital tuner	-02E	01E

[1-2] VERSION (2)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example
DTB HARD	DTB Hardware Version	0342
PASSWORD	User setting password	1234
DP TX	DP TX Firmware Version	123456789ABCDEFG
DP TX HARD	DP TX Hardware Version	2C13

[1-3] VERSION (3)

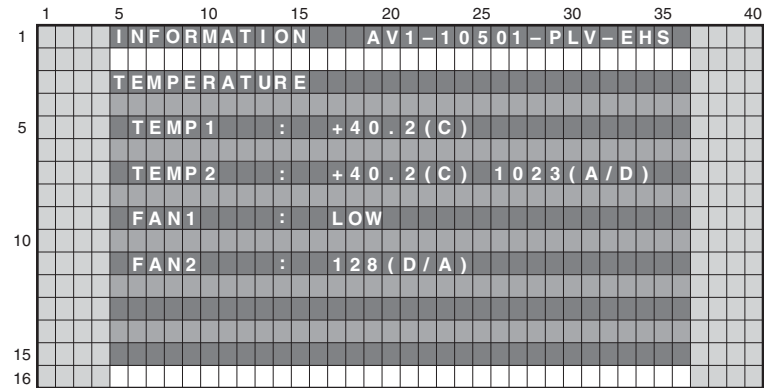
1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
P_MAIN	Panel Main microcomputer	-02AS	01A
MODULE	Module microcomputer	-06A	01A
SEQ PRS	Program of the sequence processor	-03Y	01A
Display Item	Meaning	Display Example	
DP RX	DP RX Firmware Version	123456789ABCDEFG	
DP RX HARD	DP RX Hardware Version	2C12	
Display Item	Meaning		
PANEL INFO	It displays the generation of the panel, inchage and the type of the panel.		

[1-5] TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



Display Item	Meaning
TEMP1	The temperature of the sensor on the panel side is displayed by the Centigrade (C).
TEMP2	The temperature conversion display is done with 10 bit the A/D input value of IF microcomputer. It is displayed by both the Centigrade (C) and 8 bit A/D value. Note: When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.
FAN1	Although STOP, LOW, or HIGH may be displayed, they are meaningless. Ignore those displays.
FAN2	The value of the rotation state of FAN is displayed. During a rotation of FAN, 8bit D/A value output from IF microcomputer is displayed. It is displayed with OFF during a stop.

[1-6] HOUR METER

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example
PANEL	HOURL METER of the panel	00151H 21M
P-COUNT	Accumulation power ON count of the panel	00000095 TIMES
SERIAL	Serial number of the Display (panel)	ABCDEFGHIJKLMNO

• MTB HOUR METER

In HOUR METER screen on Factory Menu, press the [ENTER/SET] key, and then it moves to the screen to clear MTB HOUR METER. (MTB HOUR METER is cleared only.)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Operation:

- Even if [←] key or [→] key is pressed, {CLEAR <=> :YES} ↔ {CLEAR <=> :NO} is repeated.
- Selecting <NO> then pressing the ENTER/SET key will return the screen to the next higher layer, without doing anything.
- Selecting <YES> then holding the ENTER/SET key pressed for 5 seconds will clear the HOUR METER (HOUR METER while the MAIN NG screen is displayed) data that are managed in MTB then return the screen to the next higher layer.

[1-7] HDMI SIGNAL INFO 1

	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Displays the input signal information of HDMI terminal

Display Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTH	HDCP authentication status
MODE	HDMI mode status
BIST	HDCP Key status (Always display it with "--".)
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension colorimetry (AVI info)
RGB QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

[1-8] HDMI SIGNAL INFO 2

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Displays input signal status of HDMI terminal

Display Item	Meaning
H RES	Number of horizontal pixels
V RES	Number of vertical lines
H DE	Number of effectively horizontal pixels
V DE	Number of effectively vertical lines
INTRL	Interlace (=INT) or progressive (=PRG)
V POL	VSYSN polarity
H POL	HSYSN polarity
AUDIO (first line)	Sampling frequency. (ex. DVD: 48kHz, CD: 44.1kHz) *1
AUDIO (second line)	Audio format PCM (PCM) or No PCM (no PCM)
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info) 422 or 444 or RGB *2
COLMET	Colorimetry (AVI Info)
ASPECT	Aspect (AVI Info)
ACTIVE	Active format (AVI Info)
V FMT	Video format (AVI Info)
PIX RP	Pixel count
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

*1: Confirm if this item is displayed when the audio is not outputted.

*2: If may not match to the state of emission devices when the color is abnormal.

Display of HDMI FACTORY and correspondence of resolution

Please confirm the following items when the picture doesn't come out.

Input Signal	FACTORY Display				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)@60	858	262 or 263	720	240	720x480i@60
480p (525p)@60	858	525	720	480	720x480p@60
1080i (1125i)@60	2200	562 or 563	1920	540	1920x1080i@60
720p (750p)@60	1650	750	1280	720	1280x720p@60
1080p (1125p)@60	2200	1125	1920	1080	1920x1080p@60
1080p (1125p)@24	2750	1125	1920	1080	1920x1080p@24
576i (625i)@50	864	312 or 313	720	288	720x576i@50
576p (625p)@50	864	625	720	576	720x576p@50
1080i (1125i)@50	2640	562 or 563	1920	540	1920x1080i@50
720p (750p)@50	1980	750	1280	720	1280x720p@50
1080p (1125p)@50	2640	1125	1920	1080	1920x1080p@50

A

B

c

D

5

7

A [2] PANEL FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[2-1]	PANEL INFORMATION	——	——
[2-2]	PANEL WORKS	——	——
[2-3]	POWER DOWN	——	——
[2-4]	SHUT DOWN	——	——
[2-5]	PANEL-1 ADJ (+)	——	——
[2-6]	PANEL-2 ADJ (+)	——	——
[2-7]	PANEL FUNCTION (+)	——	——
[2-8]	ETC. (+)	——	——
[2-9]	RASTER MASK SETUP (+)	——	——
[2-10]	PATTERN MASK SETUP (+)	——	——
[2-11]	COMBI MASK SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

C [3] PANEL MAIN FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[3-1]	PM NG INFO	——	——
[3-2]	PM STATE INFO	——	——
[3-3]	DP_RX INFO	——	——
[3-4]	PM_SETUP (+)	——	——

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

D [4] OPTION

Operation item

No.	Function	Content	RS-232C
[4-1]	CH PRESET <=>	Set the channel map for production line	SCP
[4-2]	Digital AFT <=>	Set AFT of the Satellite digital broadcasting	AFT
[4-3]	SYNC DET (+)	Set the synchronized signal detection of VDEC	——
[4-4]	CTI (+)	Set the synchronized signal detection of VDEC	——

E [4-1] CH PRESET <=>

Exclusively used for production line.

[4-2] Digital AFT <=>

Exclusively used for production line.

[4-3] SYNC DET (+)

Exclusively used for technical analysis (details omitted).

F [4-4] CTI (+)

Exclusively used for technical analysis (details omitted).

[5] INITIALIZE

Operation item

No.	Function	Content	RS-232C
[5-1]	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
[5-2]	FINAL SETUP	Initialize flash memories on virgin product status	FST
[5-3]	DTB SERVICE MODE	Enter the Digital Tuner Service Menu	----
[5-4]	Wide XGA AUTO <=>	Exclusively used for technical analysis.	----
[5-5]	AUTO ADJUST. <=>	Perform the auto-adjustment setting process	----

[5-1] SIDE MASK LEVEL (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5								
10								
15	SIDE MASK LEVEL (+)							
16								

To configure sidemask level (To adjust the values, input signal is required).

Display Item	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255, Initial value: 115)	SML

Note: In this mode (SIDE MASK LEVEL), adjustment value cannot be changed with the VOLUME +/- keys.

[5-2] FINAL SETUP

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5	FINAL SETUP							
10								
15	DATA RESET <=>	: NO						
16								

- To reset each memory value to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to the previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.
When replacing the MAIN BLOCK Assy, the FINAL SETUP is required.

6.3 DIGITAL TUNER SERVICE MENU

The Digital Tuner Service Menu is provided for collecting data for technological examination when the Digital Tuner has any problem in the market. This menu is introduced here just for reference.

[1] REMOTE CONTROL CODE IN DIGITAL TUNER SERVICE MENU

The following remote control cord is valid in the Digital Tuner Service Menu.

Remote Control Keys	Basic Functions	Remarks
↓ (DOWN)	Selecting the menu items and shifting the pages.	Shifting downward to the next item. Moving to the next lower page.
↑ (UP)		Shifting upward to the next item. Moving to the next upper page.
← (LEFT)	Selecting the setting value.	Modifying the setting of selected items.
→ (RIGHT)		
ENTER/SET	Shifting the menu layers	Shifting to the next menu screen.
RETURN		Shifting to the previous menu screen.
Numeric Keys	Numeric input	Input the numerical value.
POWER OFF	Power OFF	Turning the power off.
STANDBY/ON		
FACTORY	Factory ON/OFF	Release the Menu, then enter the Service Factory menu.
EXIT	MENU exit	After you exit the menu, the channel that was selected on the menu will be displayed.
MUTING	Muting	
HOME MENU	HOME MENU ON/OFF	

[2] HIERARCHICAL TABLE OF DIGITAL TUNER SERVICE MENU

Item	Remarks
Large Item	
Middle Item	
6.3 [3] Digital Tuner Service Menu	
6.3 [4] HMG Service Menu	
	Exclusively used for technical analysis: HomeMediaGallery-related information indication
6.3 [5] Digital	
Bandwidth	Exclusively used for technical analysis
Frequency	Exclusively used for technical analysis
Program Number	Exclusively used for technical analysis
Audio PID	Exclusively used for technical analysis
DTV Tuning Status	Exclusively used for technical analysis: Terrestrial digital broadcasting-related information indication
6.3 [6] Satellite	
Modulation	Exclusively used for technical analysis
Frequency	Exclusively used for technical analysis
Symbol Rate	Exclusively used for technical analysis
LNB POWER	Exclusively used for technical analysis
LNB BAND	Exclusively used for technical analysis
Program Number	Exclusively used for technical analysis
Audio PID	Exclusively used for technical analysis
SAT Tuning Status	Exclusively used for technical analysis: Satellite digital broadcasting-related information indication
6.3 [7] Software Version	
	Exclusively used for technical analysis: The software revision information that consists of it in DTB software

[3] DIGITAL TUNER SERVICE MENU SCREEN

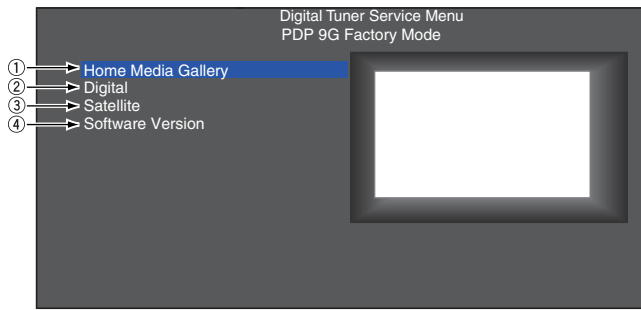


Fig.1 Digital Tuner Service Menu screen

Display a large item list of Digital Tuner Service Menu.
Select each item, and shift to each setting / information display screen.

- ① Home Media Gallery-related information indication
- ② Terrestrial digital-related setting / information indication
- ③ Satellite digital-related setting / information indication
- ④ Digital Tuner-related detailed software version indication

[4] HOME MEDIA GALLERY SCREEN

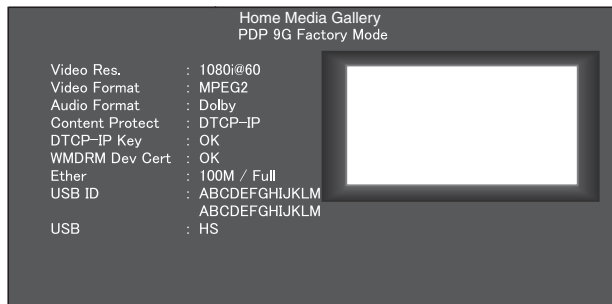


Fig.2 Home Media Gallery screen

Display the Home Media Gallery-related information.

[5] DIGITAL SCREEN

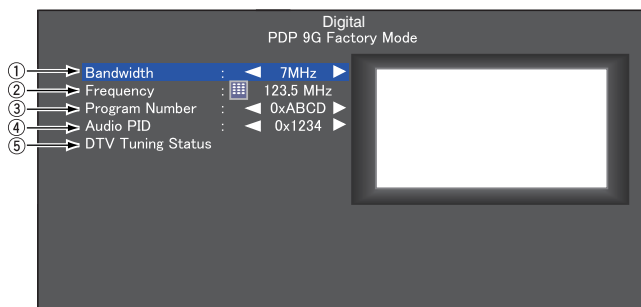


Fig.3 Digital screen

Display the Digital broadcasting-related setting / information indication.(except the satellite digital)

- ① The Bandwidth for receiving a digital broadcast can be selected. (7 MHz/8 MHz)
- ② The frequency can be set (up to 1 digit after the decimal point).
- ③ Program Number in the same stream: Service ID can be selected.
- ④ Audio PID in the same stream: Audio PID can be selected.
- ⑤ The DTV Tuning Status is displayed.

The data displayed on the DTV Tuning Status screen are as shown below:

The instructions for servicing using this screen is shown in "How to confirm the DTV Tuning Status on the Digital Tuner Service Menu" of section 5.2 [4]. Therefore, this screen is introduced here just for reference.

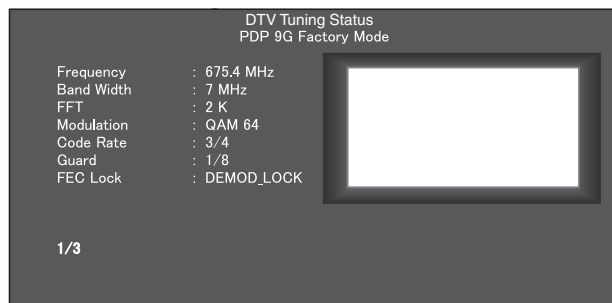


Fig.4 DTV Tuning Status (1/3) screen

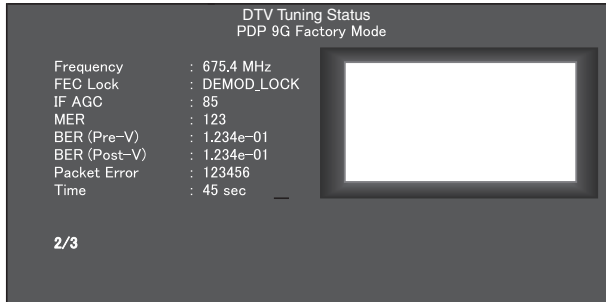


Fig.5 DTV Tuning Status screen (2/3) screen

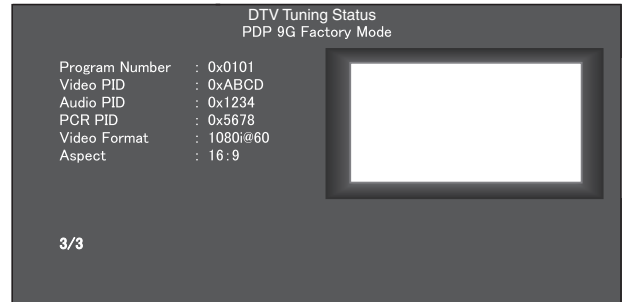


Fig.6 DTV Tuning Status screen (3/3) screen

[6] SATELLITE SCREEN

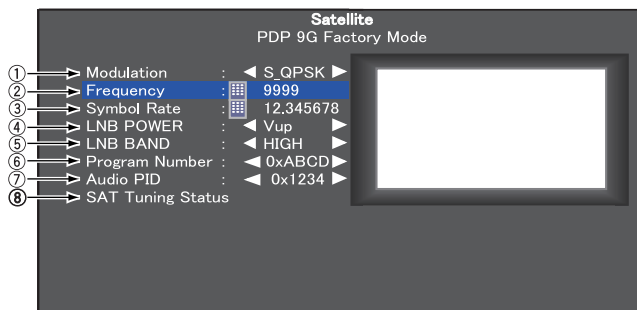


Fig.7 Satellite screen

Display the Satellite Digital broadcasting-related setting / information indication.

- ① The modulation method can be selected. (S_QPSK/S2_QPSK/S2_8PSK)
- ② The frequency can be set (0001 to 9999).
- ③ The symbol Rate can be set (1.000000 to 99.999999)
- ④ The LNB power voltage can be selected. (OFF/V/H/Vup/Hup)
- ⑤ The LNB Bandwidth can be selected. (Low/High)
- ⑥ Program Number in the same stream: Service ID can be selected.
- ⑦ Audio PID in the same stream: Audio PID can be selected.
- ⑧ The Tuning Status of Satellite Digital is displayed.

The data displayed on the SAT Tuning Status screen are as shown below:

The instructions for servicing using this screen will be provided as service information.

Therefore, this screen is introduced here just for reference.

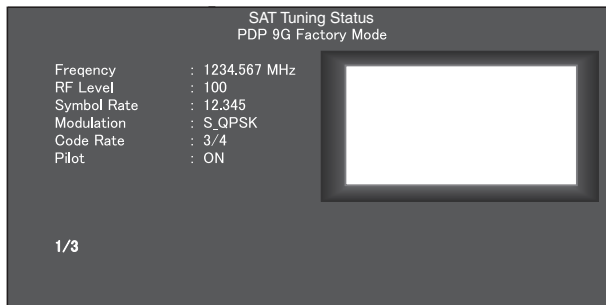


Fig.8 SAT Tuning Status (1/3) screen

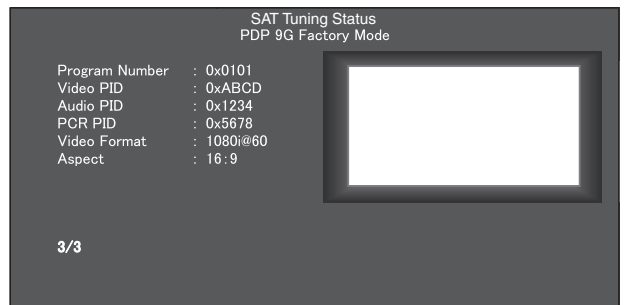


Fig.10 SAT Tuning Status (3/3) screen

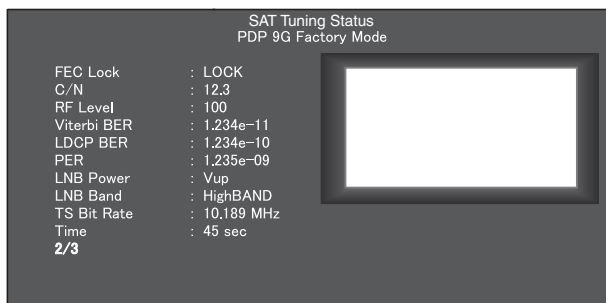


Fig.9 SAT Tuning Status (2/3) screen

[7] SOFTWARE VERSION SCREEN

The details are not described here, as this is provided for technical examination.

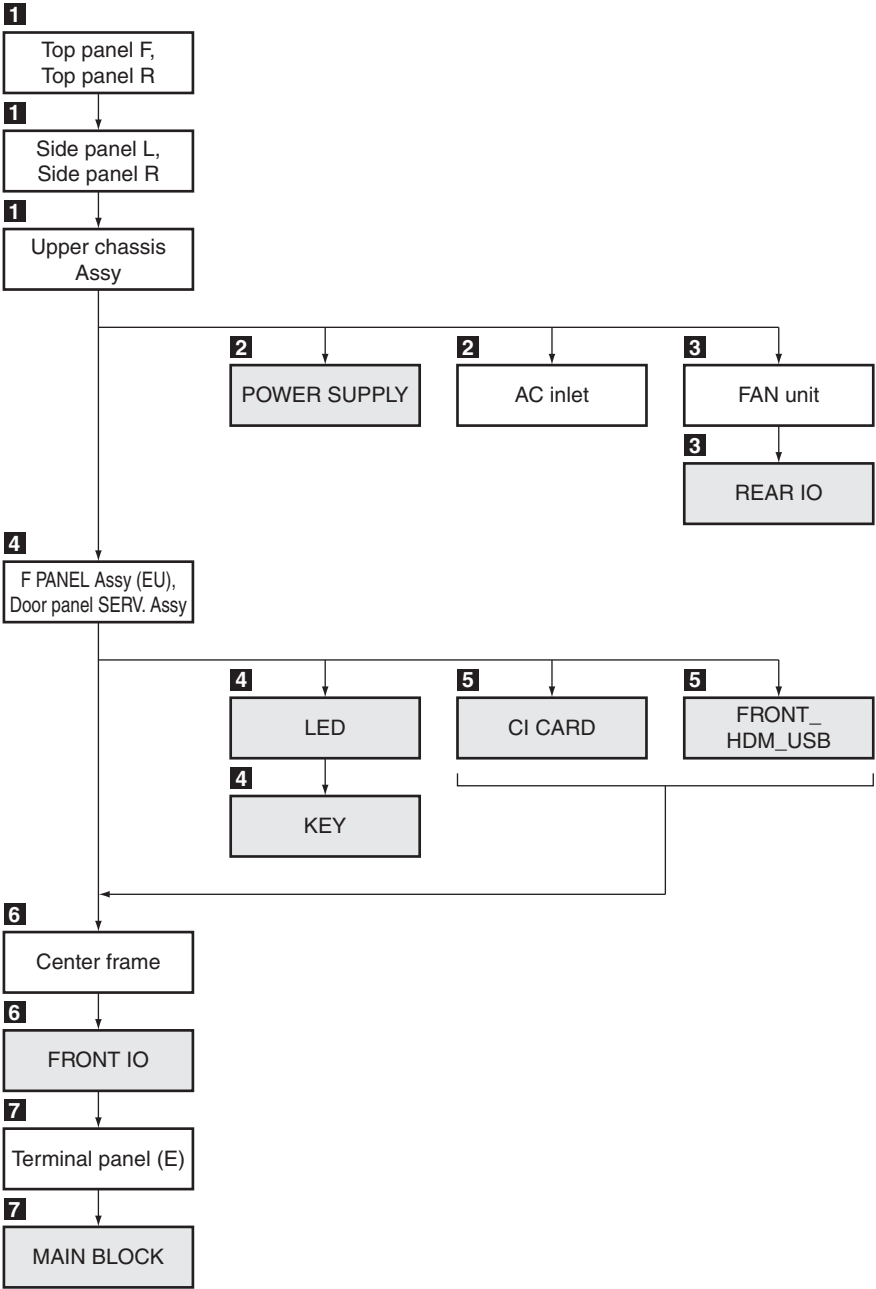
7. DISASSEMBLY

7.1 FLOWCHART OF REMOVAL ORDER

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

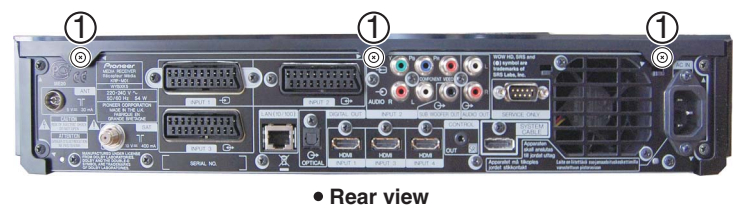
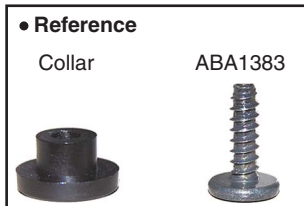
1 Exterior Section

The high-gloss resin parts of the exterior of this product are easily scratched.
During disassembly and reassembly of this product, be careful not to scratch the exterior.

Attach the protect film (GGP1121) to the inside surface of the door.
(For details on the place at which the protect film is to be attached, see “1.2 NOTES SPECIFIC TO THIS PRODUCT.”)

● Top panel F and R

- ① Remove the three collar and three screws.
(ABA1383)

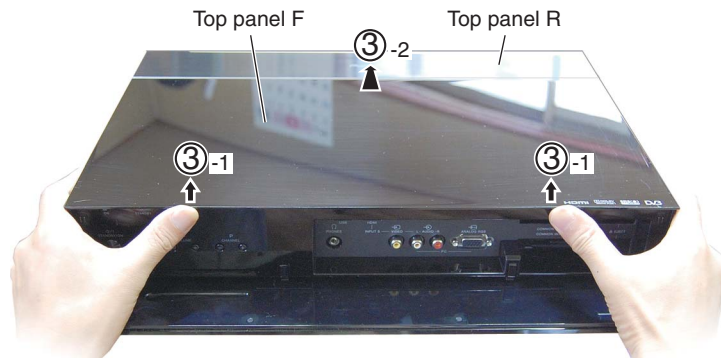


- ② Open the door panel Section.



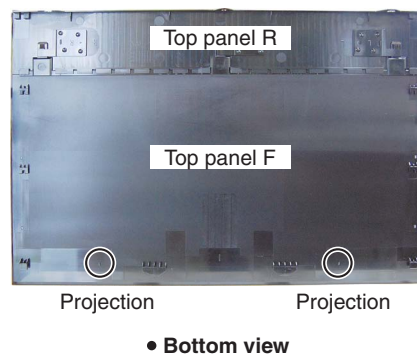
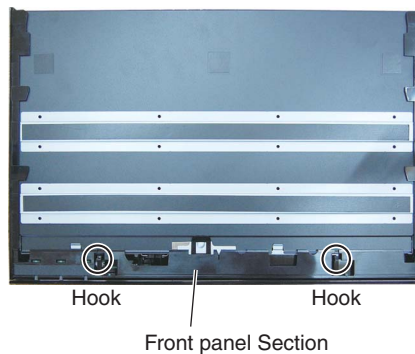
A

- ③ While pushing up at two places of the top panel using your thumbs, as shown in the photo below, to unhook the top panel, remove it by sliding it toward the rear panel.



B

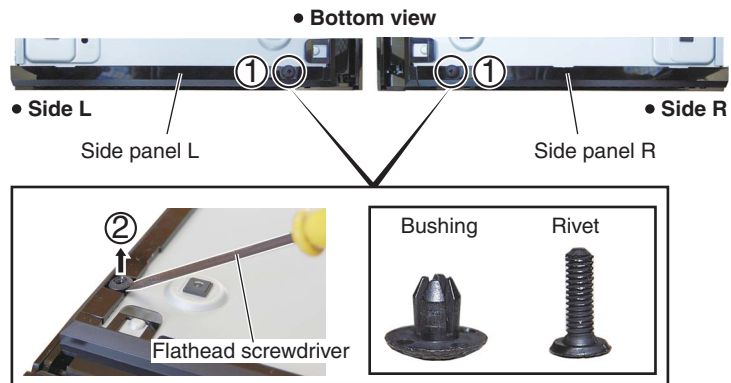
● Positions of the hooks



C

● Side panel L and R

- ① Remove the two rivets.
② Remove the two bushings, using a flathead screwdriver.

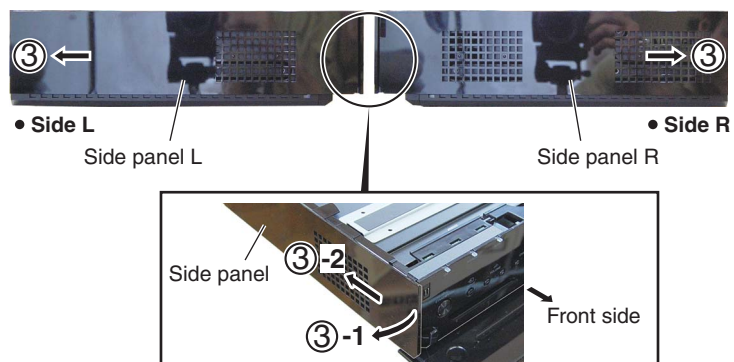


D

- ③ Remove the side panels L and R.

③-1 ③-2

Slide the side panel rearward, by stretching the front edge of the side panel outward, and remove it.



E

F

● Upper chassis Assy

- ① Remove the 14 screws. (BBZ30P060FTB)



● Rear view



● Side L

● Side R

● Screw tightening order

The other screws are random order.



- ② Remove the upper chassis Assy.

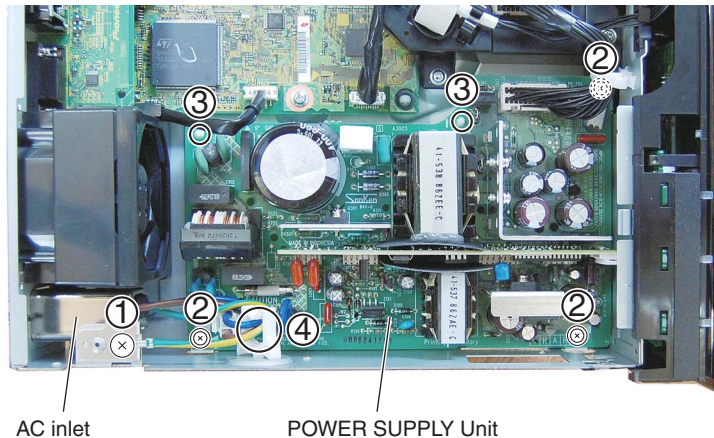


KRP-M01

A

2 POWER SUPPLY Unit

- ① Remove the one screw. (BMP40P080FSN)
- ② Remove the three screws. (BBB30P080FSN)
- ③ Remove the two circuit board spacers.
- ④ Release the jumper wire.



B

C

- ⑤ Remove the two screws. (ABZ30P080FTB)
- ⑥ Remove the AC inlet.

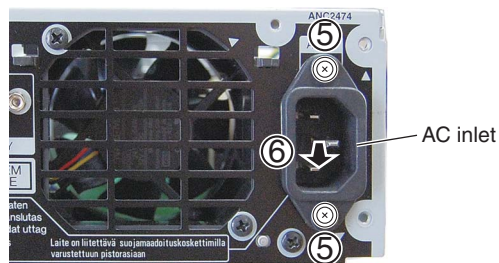
• An installation direction of the AC inlet



OK



NG

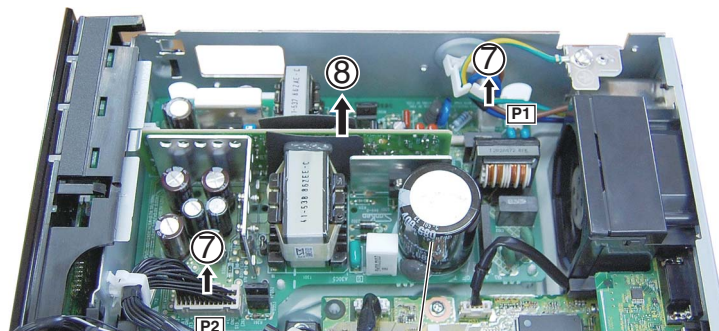


• Rear view

D

E

- ⑦ Disconnect the two connectors.
- ⑧ Remove the POWER SUPPLY Unit.

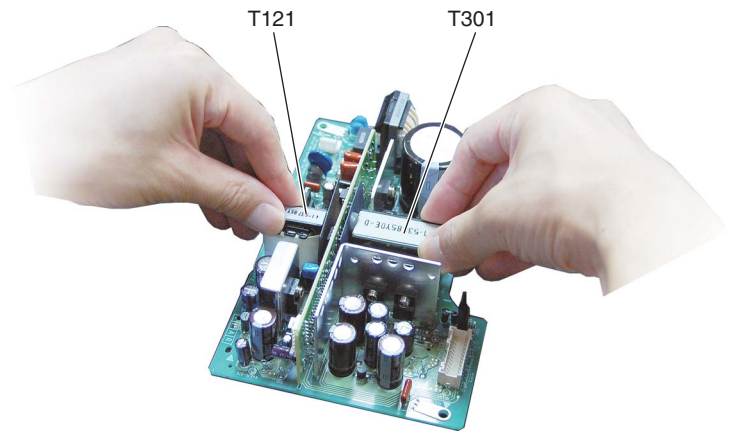


F

Notes on Removing the POWER SUPPLY Unit

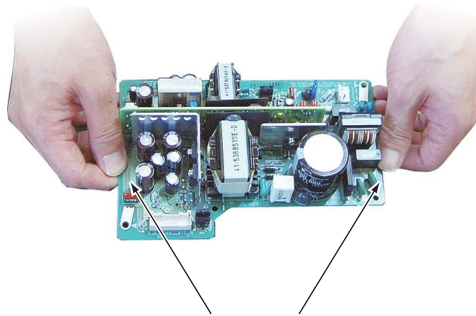
● How to lift up the POWER SUPPLY Unit

When you remove the POWER SUPPLY Unit from the chassis, first lift the board by pinching T121 and T301 transformers with your fingers. When the board is lifted up to a certain height, hold it by hand. NEVER hold the board by the radiator that is adjacent to the transformer.

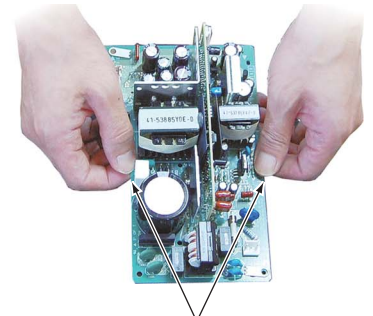


● How to hold the board after removing it from the chassis

The following two ways are recommended for holding the POWER SUPPLY Unit:

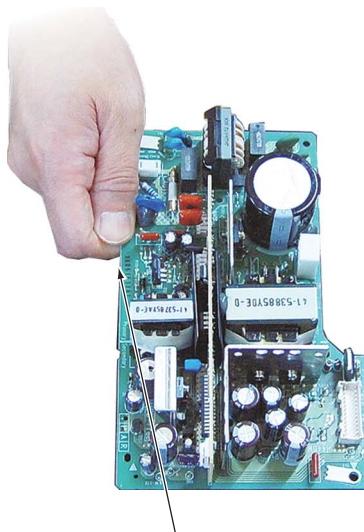


Hold at the center positions of both rims of the board.

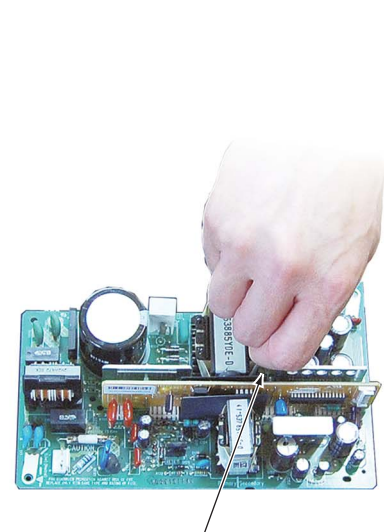


Hold at the center positions of both rims of the board.

Ways to be avoided:



NEVER hold a corner of the board with one hand.



NEVER hold the board by the radiator with one hand.

A

Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup

For 3-5 minutes after the unit is turned off, residual electric charge remains in the C310 capacitor on the POWER SUPPLY Unit. Before removing the POWER SUPPLY Unit from the chassis, be sure to confirm that residual charge inside the POWER SUPPLY Unit has become sufficiently low. (Without forced discharge, residual charge that remains after 3-5 minutes will fall to one-tenth or less, which is still about 20 V. Therefore, even after the POWER SUPPLY Unit is removed, it is recommended to perform forced discharge on the POWER SUPPLY Unit, as shown below.)

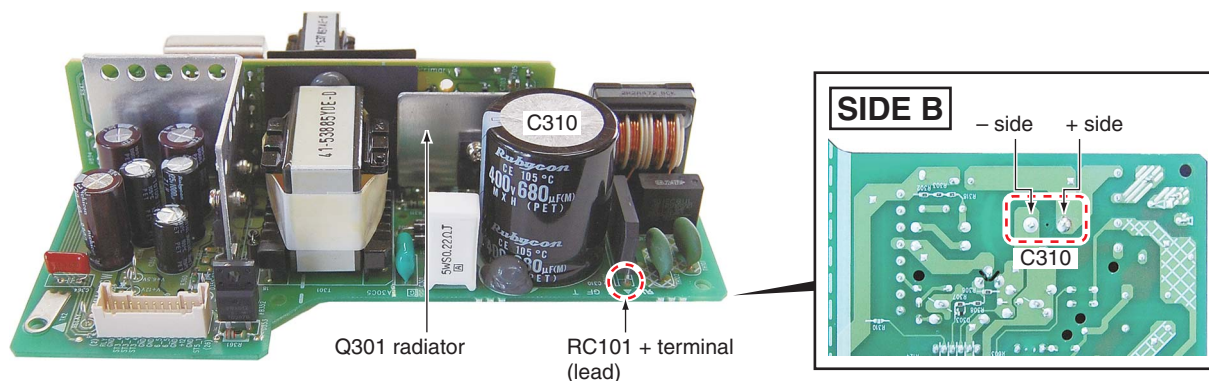
For quick removal of residual charge, forced discharge is recommended, using two 220 ohm/10 W resistors (440 ohm/20 W).

B

How to remove the POWER SUPPLY Unit

1. Make sure that the AC power cord is unplugged. Using a tester, check the voltage between the + terminal of RC101 bridge diode and Q301 radiator (equivalent to the voltage between two electrodes of C310).
2. Let the unit sit for more than 5 minutes until the voltage equivalent to that between two electrodes of C310 falls to under 20 V.
3. After checking that the voltage is under 20 V, disconnect the connectors of the POWER SUPPLY Unit and remove the POWER SUPPLY Unit.
4. Using two resistors mentioned above, completely discharge residual charge from C310.

C



After checking that the voltage at the measurement points (equivalent to the voltage between two electrodes of C310) is under 20 V, remove the POWER SUPPLY Unit. Then, completely discharge residual charge, using resistors.

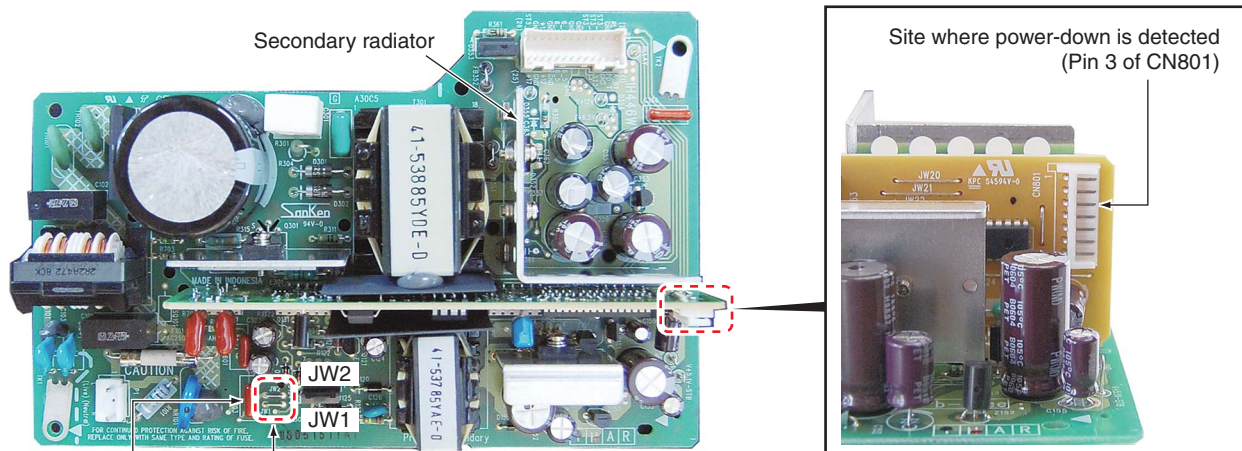
D

How to reset Standby power latchup

(In a case where the protection against Standby power excess voltage is activated)

1. After removing the causes of the malfunction, short-circuit between the JW1 and JW2 jumpers.
2. If the POWER SUPPLY Unit functions properly, after opening the above jumpers, the unit starts up.

E



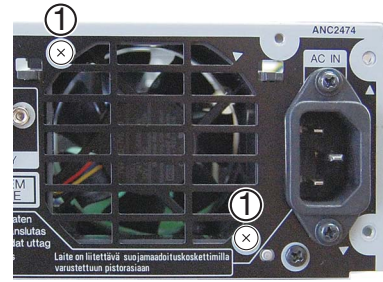
C603

To forcibly reset latchup of STBY3.4 V, short-circuit between JW1 and JW2 (near C603), using a flathead screwdriver or similar object. If the causes of the malfunction are removed, after opening the jumpers, the unit starts up.

3 REAR IO Assy

● FAN unit

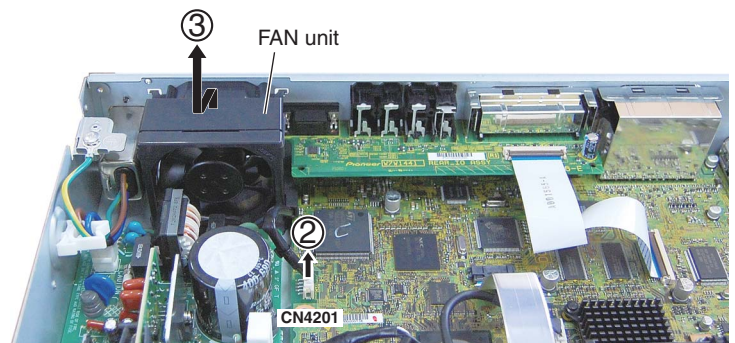
- ① Remove the two screws. (BPZ30P080FTB)



• Rear view

- ② Disconnect the one connector.

- ③ Remove the FAN unit.



● REAR IO Assy

- ① Remove the two hexagon headed screws. (ABA1382)

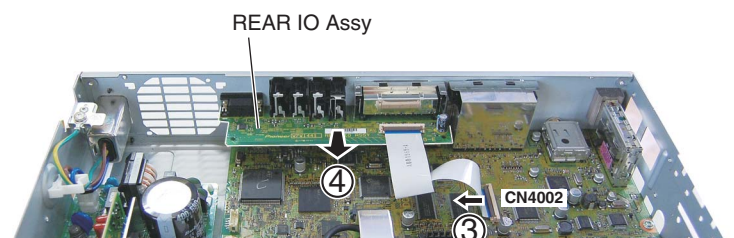
- ② Remove the four screws. (BPZ30P080FTB)



• Rear view

- ③ Disconnect the one flexible cable.

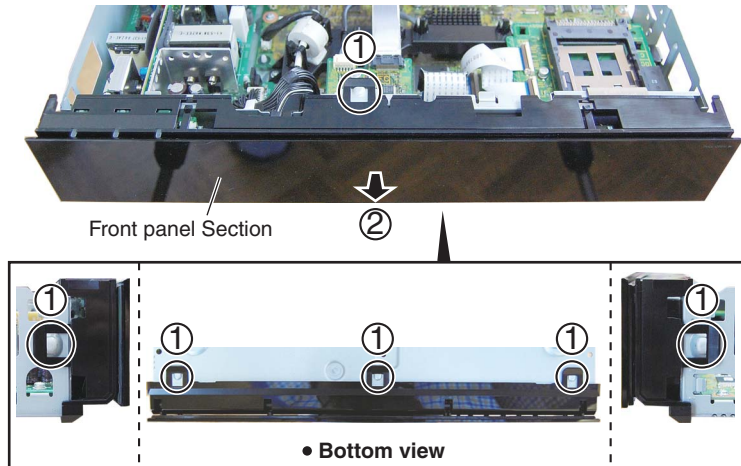
- ④ Remove the REAR IO Assy.



4 Front Panel Section

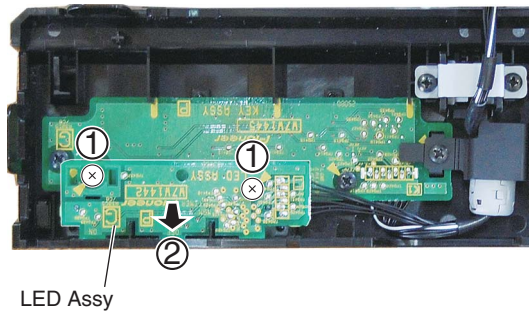
● Front panel Section

- ① Unhook the six hooks.
- ② Remove the front panel Section.



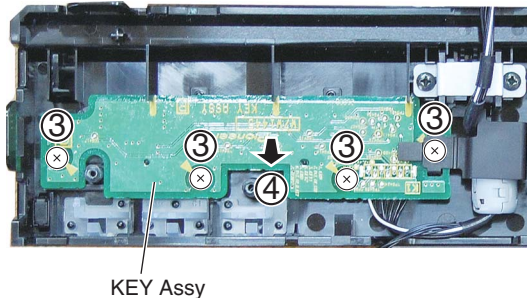
● LED and KEY Assys

- ① Remove the two screws. (BPZ30P080FTB)
- ② Remove the LED Assy.



- ③ Remove the four screws. (BPZ30P080FTB)
- ④ Remove the KEY Assy.

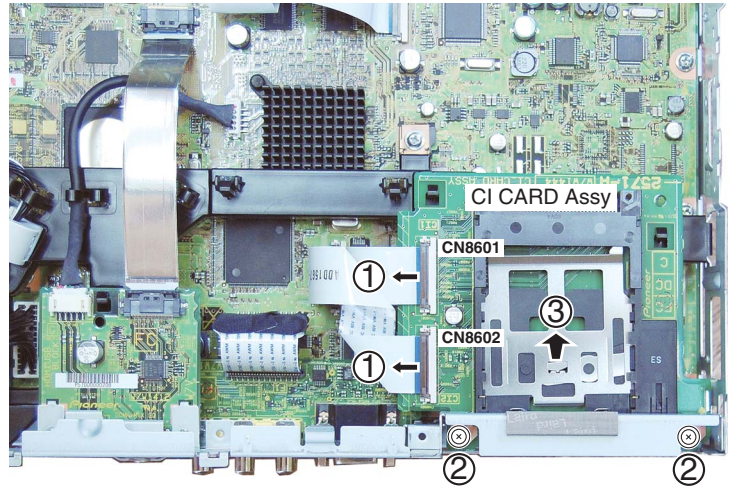
Note:
Before tightening screws, make sure that the protect film has been attached.
(For details on the place at which the protect film is to be attached, see "1.2 NOTES SPECIFIC TO THIS PRODUCT.")



5 CI CARD and FRONT_HDM_USB Assys

● CI CARD Assy

- ① Disconnect the two flexible cables.
- ② Remove the two screws. (ABZ30P060FTC)
- ③ Remove the CI CARD Assy.

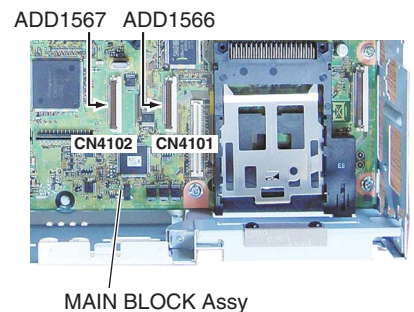
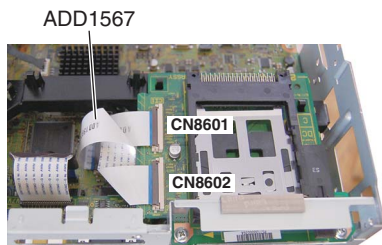
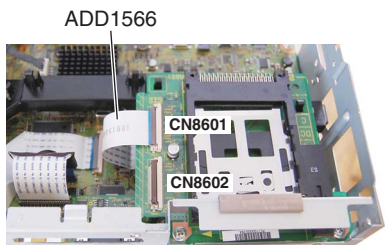


● Note on Connection of the Flexible Flat Cable for the CI CARD Assy

How to Check for Inverse Connection

After connecting the FFC cable for the CI CARD Assy, make sure that the part number printed on the upper surface of the cable is ADD1567.

ADD1567	Correctly connected
ADD1566	Inversely connected



Unit operation when the cable is inversely connected

	Activated operation	Unit operation
Unit	When activated	It starts up properly.
Slot 1: Lower slot (mounted on the MAIN BLOCK Assy)	When the circuits in the Card block are activated	They operate properly.
	When a card is inserted in Slot 1	They operate properly.
Slot 2: Upper slot (mounted on the CI CARD Assy)	When the circuits in the Card block are activated	They are not activated (no risk of being damaged, though).
	When a card is inserted in Slot 2	They are not activated (no risk of being damaged, though).

A

B

C

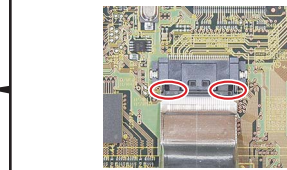
D

E

F

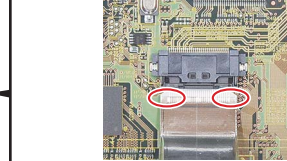
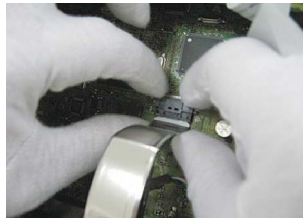
● Notes on Connecting the Shielded Flexible Flat Cable

OK



Push on the connector itself.

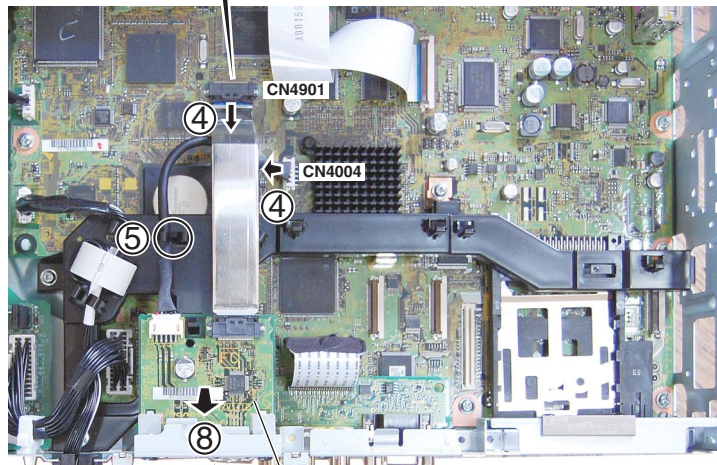
NG



Do NOT connect the connector by pushing with the cable.

● FRONT_HDM_USB Assy

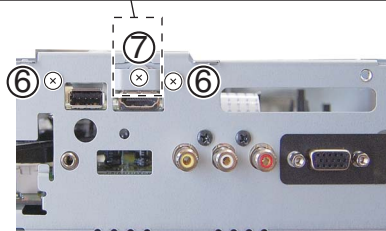
- ④ Disconnect the one flexible cable and one connectors.
- ⑤ Release the jumper wire.
- ⑥ Remove the two screws. (BBZ30P060FTB)
- ⑦ Remove the one screw. (VBA1088)
- ⑧ Remove the FRONT_HDM_USB Assy.



FRONT_HDM_USB Assy

Note:

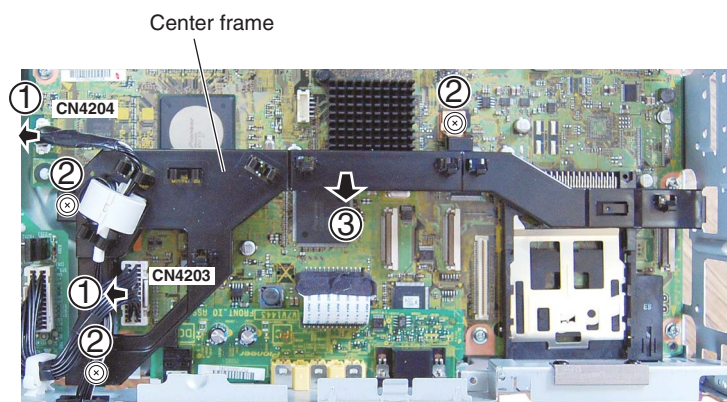
Do not use an electric screwdriver.
If the screw is over-tightened, the screw thread may be damaged.



6 FRONT IO Assy

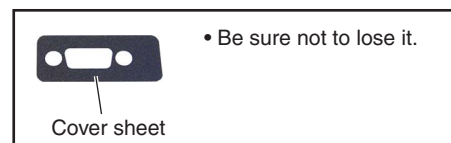
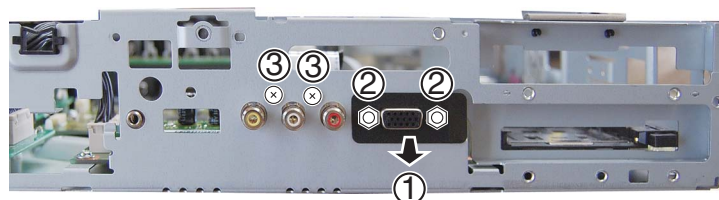
● Center frame

- ① Disconnect the two connectors.
- ② Remove the three screws. (ABA1383)
- ③ Remove the center frame.

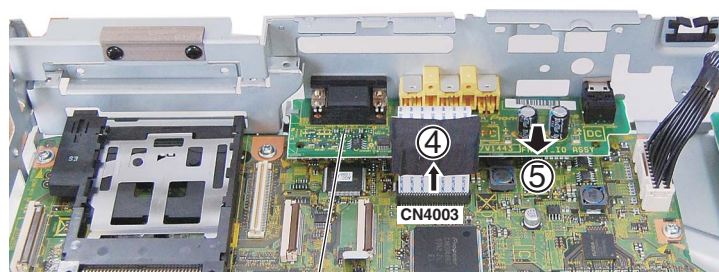


● FRONT IO Assy

- ① Remove the cover sheet.
- ② Remove the two hexagon headed screws. (ABA1382)
- ③ Remove the two screws. (BPZ30P080FTB)



- ④ Disconnect the one flexible cable.
- ⑤ Remove the FRONT IO Assy.

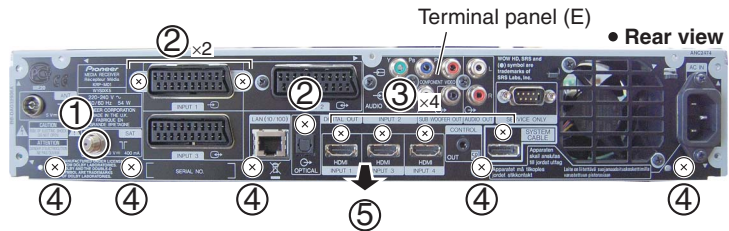


FRONT IO Assy

7 MAIN BLOCK Assy

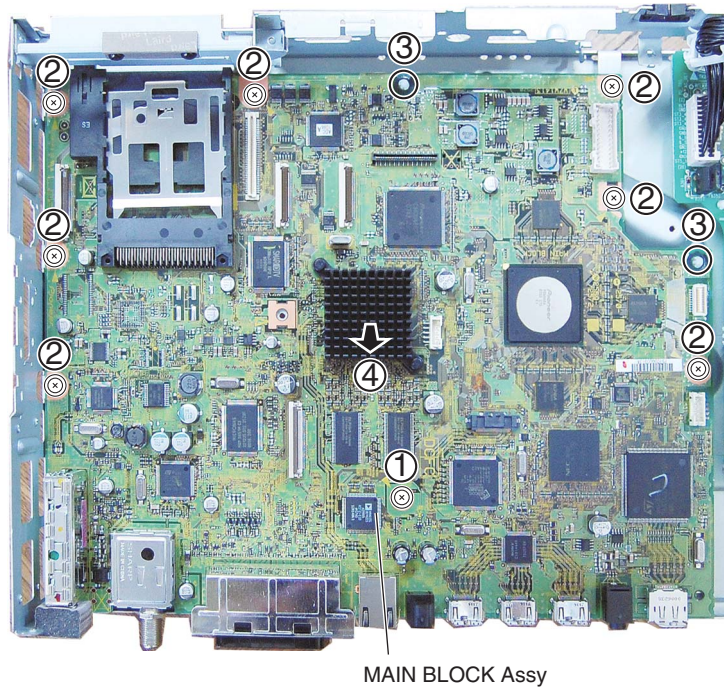
● Terminal panel (E)

- ① Remove the one nut. (BBN1005)
- ② Remove the three screws. (BPZ30P080FTB)
- ③ Remove the four screws. (BMZ30P060FTB)
- ④ Remove the five screws. (BBZ30P060FTB)
- ⑤ Remove the terminal panel (E).



● MAIN BLOCK Assy

- ① Remove the one screw. (AMZ30P060FTB)
- ② Remove the seven screws. (ABA1383)
- ③ Remove the two circuit board spacers.
- ④ Remove the MAIN BLOCK Assy.



8. EACH SETTING AND ADJUSTMENT



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	No adjustment required
MAIN BLOCK Assy (*)	➡	Execute section [5-5] AUTO ADJUSTMENT of 6.2 [5] INITIALIZE.
Other assemblies	➡	No adjustment required

(*) : When replacing the MAIN BLOCK Assy, be sure to perform the FINAL SETUP.

■ Replacement of the whole Assy is required when one of the following part on the corresponding Assy is in failure

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AXY1204	POWER SUPPLY Unit	U0003	—	—	The maker forbids Pioneer from repairing the Assy.
AWV2570 AWV2572	MAIN BLOCK Assy	IC6403	DTV Flash	S29GL512P10TFIR1-K (AGC1089)	Because ID data (MAC address and data on keys) have been stored
		IC6001	SYSTEM IC (BCM7404)	BCM7404XKPB11G-K	Because adjustments and data writing at the level of production line are required after replacement
		IC5002	HDCP EEPROM	BR24L02FV-W	
		IC5003	HDCP EEPROM	BR24L02FV-W	
		IC5004	HDCP EEPROM	BR24L02FV-W	
		IC7301	FRONT HDCP EEPROM	BR24L02FV-W	
		IC7004	EMMA2 EEPROM	BR24L64F-W	
		IC6701	ARIA FLASH	S29GL016A90TFIR2-K (AGC1088)	
		IC6811	IF UCOM	AGC1086	
		IC7202	EMMA2 FLASH	S29GL032N90TFIO4-K (AGC1087)	
		IC6201	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6202	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6203	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6204	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
AWV2571 (AWW1443)	FRONT_IO Assy	IC8501	PC EEPROM	BR24L01AFJ-W	Because adjustments and data writing at the level of production line are required after replacement

A

Part whose replacement is difficult

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AWV2570 AWV2572	MAIN BLOCK Assy	IC7003	SYSTEM IC (EMMA2)	UPD61123F1-100KA3A-K	Because these ICs are packaged in BGA
		IC6501	ASIC (ARIA)	PD6568A-K	
		IC6702	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6703	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6704	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC4801	ADC	AD9985KSTZ	Because these ICs require readjustment after replacement
		IC5101	AV SW	R2S11006FT	
		IC5501	RGB SW	R2S11001FT	
		IC4702	VDEC	CM0048BF	
		U5301	DVB-T	AXF1191	Because the part has many pins (from G9, through-hole print will be adopted)
		U5201	DVB-S2	AXF1195	
		JA5601	CI connector	AKP1341	Because the part has many pins
		JA7502	Scart connector	AKP1265	
		JA8801	Scart connector	AKP1266	
		IC4901	HDMI	SII9135CTU-K	Because a radiation pad is provided
		IC5201	S2 demodulation IC	STV-0903	
		IC4601	Regulator	LTC3407EMSE-2	
		IC4501	Regulator	BD8624EFV	
		IC4503	LNB Regulator	LNBH23PP-TBB	

B

C

D

E

F

Adjustment Procedures After a Part that Requires Readjustment is Replaced

Execute section "[5-5] AUTO ADJUST. <=>" of "6.2 [5] INITIALIZE."

8.2 HOW TO UPDATE USB

Preparation

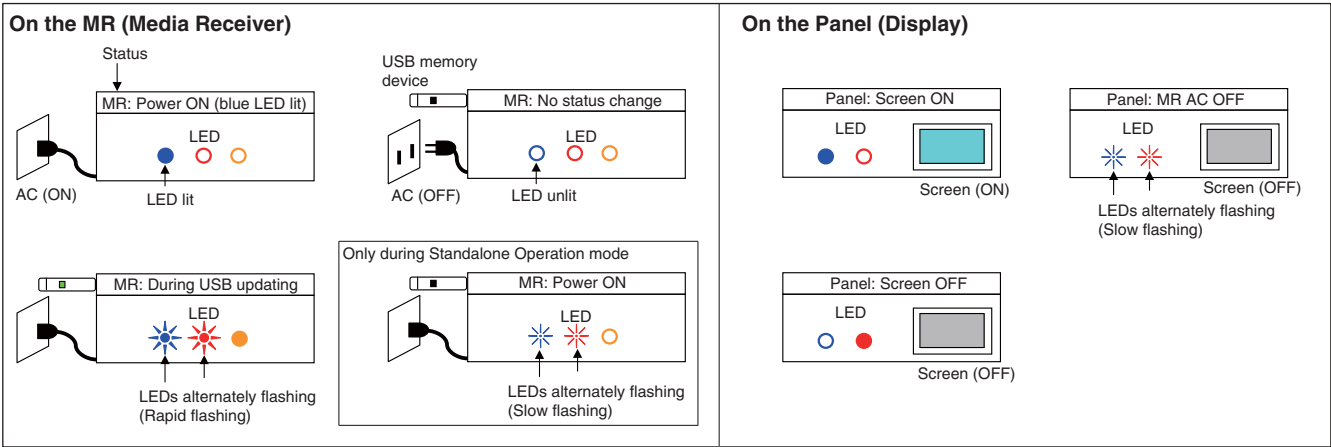
Expand the image-file folder for USB updating in the root directory of the USB memory device.

Example: Folder construction after expansion in the root directory of the USB memory device

(With the nonencrypted folder)	[update] ├─ boot.img ├─ update.ctl ├─ update.iso └─ update.lst
(With the encrypted folder)	[update] ├─ boot.img ├─ update.ctl ├─ update.enc ├─ update.key └─ update.lst

An encrypted image-file folder for USB updating will be released for general users.

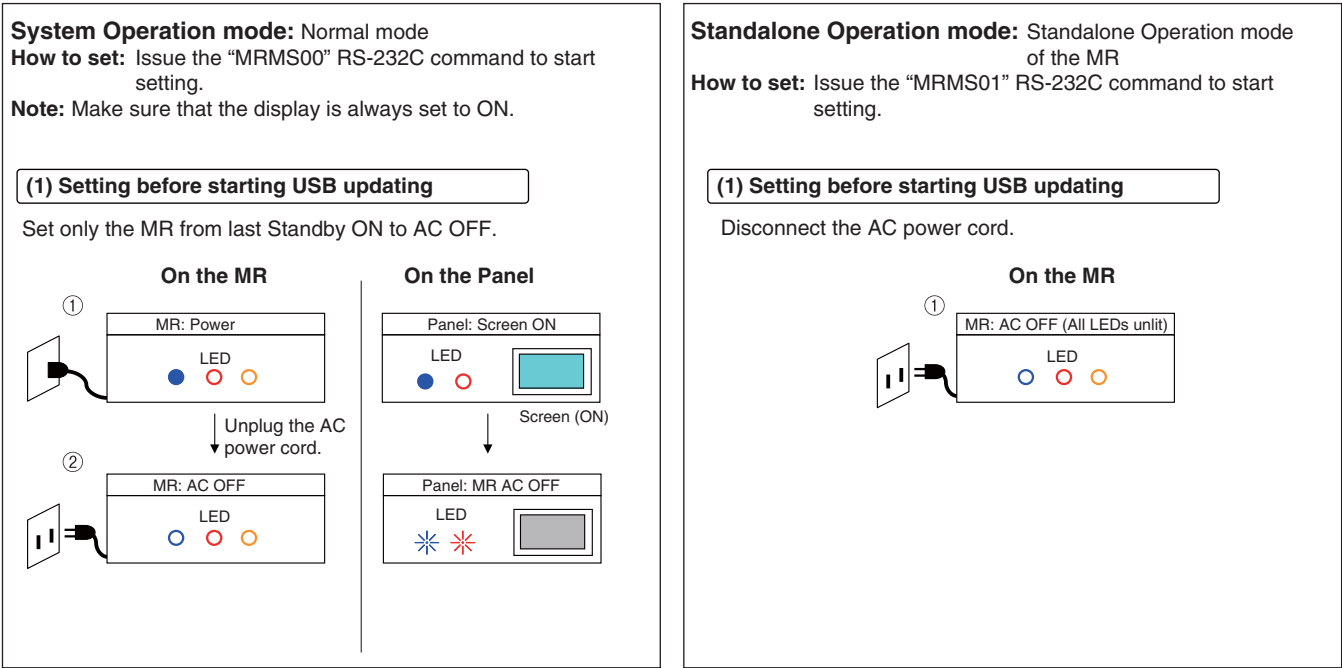
Description of the figures



Procedures

The methods for USB updating in System Operation mode and Standalone Operation mode of the MR are described below.

Note: Make sure that the display is always set in System Operation mode.

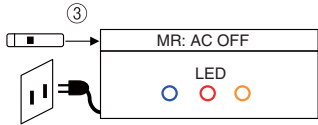


A

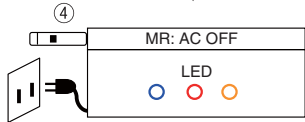
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

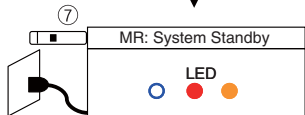
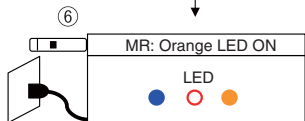
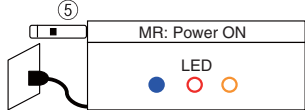
On the MR



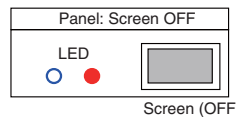
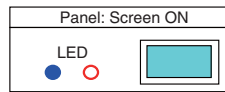
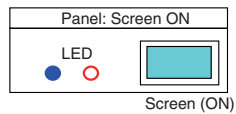
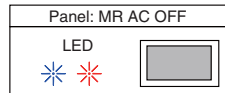
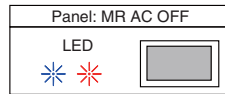
↓ Connect a USB memory device.



↓ Plug in the AC power cord.



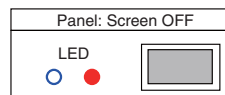
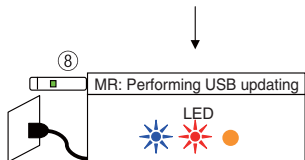
On the Panel



Note: If you interrupt the updating procedure in this step, updating is not started, and normal startup will begin.

NEVER use the remote control unit. (Especially DO NOT use the Power key.)

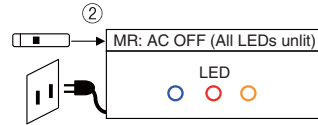
[If you use any key on the remote control unit in Steps ⑤ to ⑦]
If the unit does not shift to Step ⑧, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑧, continue the updating procedures as described.



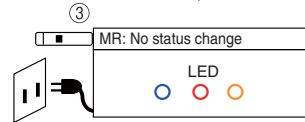
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

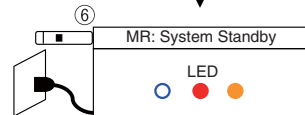
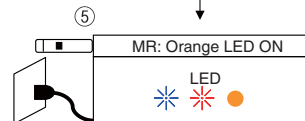
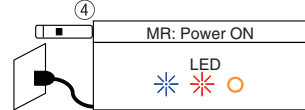
On the MR



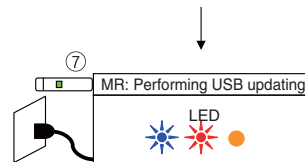
↓ Connect a USB memory device.



↓ Plug in the AC power cord.

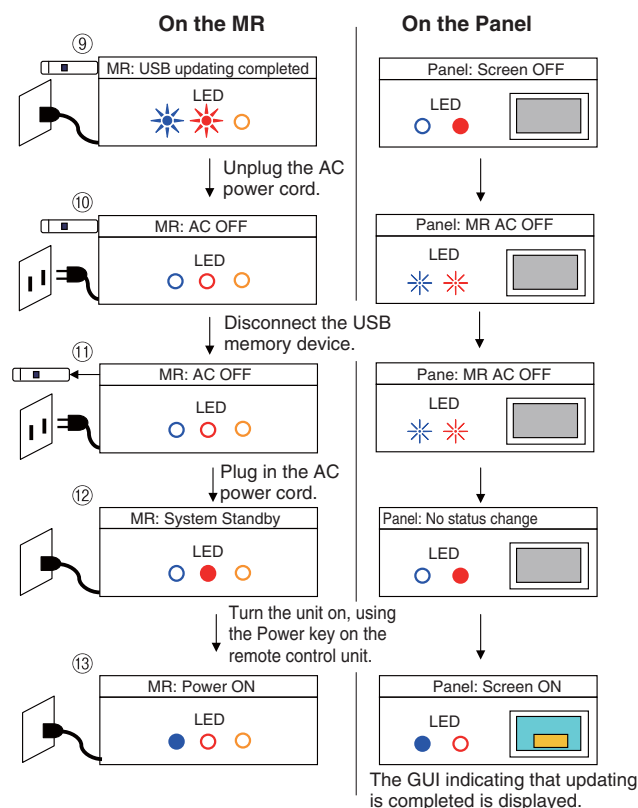


[If you use any key on the remote control unit in Steps ④ to ⑥]
If the unit does not shift to Step ⑦, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑦, continue the updating procedures as described.



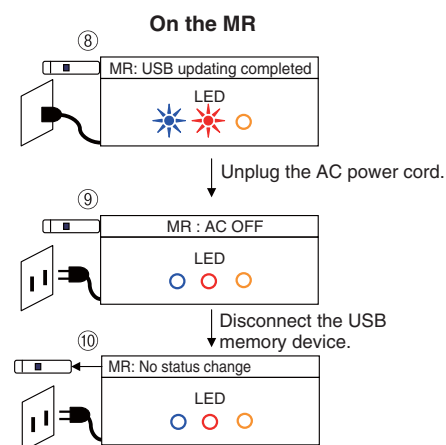
(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



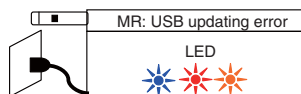
Return the MR to System Operation mode, by sending a command via the RS-232C connector.

How to set: Send the "MRMS00" command via the RS-232C connector.

In Standalone Operation mode of the MR, the GUI indicating that updating is completed is not displayed.

List of frequency of LED (orange) flashing when updating fails

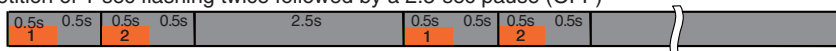
If updating is interrupted, the orange LED flashes to warn you of the error.



Frequency of Orange LED Flashing	Error Content	Details
1	(Not used)	
2	Version error	The same version or a newer version of software has already been loaded.
3	USB update startup error	Startup of USB updating failed.
4	DTV Update Error	Updating of the DTV software failed.
5	MAIN Download Error	Updating of the MAIN microcomputer software failed.
6	ARIA Download Error	Updating of the ASIC software in the previous stage failed.
7	ZEUS Download Error	Updating of the ASIC software in the later stage failed.
8	Module Download Error	Updating of the module microcomputer software failed.
9	IF Download Error	Updating of the IF microcomputer software failed.
10	USB disconnection	Abnormality in the USB memory device
11 to 13	Reserved	-
14	Destination error	The software for a different destination (Europe/North America/Australia) was used for updating.

Example: In a case where the orange LED flashes twice (version error)

Repetition of 1-sec flashing twice followed by a 2.5-sec pause (OFF)



Under the following conditions, USB updating procedures will be interrupted at Step 5 above, and normal startup will begin, but the LED does not flash for error indication.

Conditions under which the LED will not flash for error indication

- Any USB updating file is damaged
- Not all USB updating files are stored in the USB memory device
- The USB updating files are modified
- The USB memory device is defective

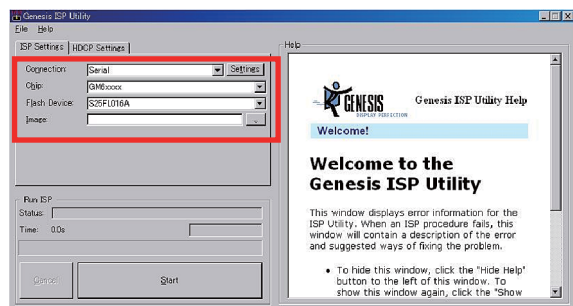
8.3 HOW TO UPDATE DISPLAY PORT FIRMWARE

1. Preparation of Tools

1. Activate the "ISPUtility xxxxxxxx.exe" file to install the ISP Utility.
On each screen, select "Next" until the installation wizard is finished.
 2. Activate the "CGProbe Redistributable xxxx.exe" file.
On each screen, select "Next" until the wizard is finished.
 3. Place the following files in the designated paths:
chip.xml
C:\Program Files\Genesis Microchip\ISP Utility\SAFELite-ISP_S25FL016A.hex
C:\Program Files\Genesis Microchip\ISP Utility\safe-lite
- Note:** If you changed the program installation path, the above-mentioned paths may be different.

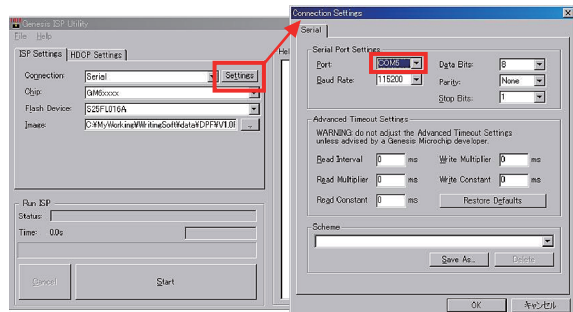
2. Updating

1. Connect the PC with the Media Receiver (MR) or Panel (Display), using an RS-232C straight cable.
2. Set the connected MR or Panel to Standby mode.
3. Disconnect the DP cable.
4. Start up the program for sending RS-232C commands:
Baud rate: 9600
COM port: Select, according to the environment of the PC.
5. Send the "UFW" command. Check that the red and blue LEDs flash.
6. Issue a command corresponding to the firmware to be updated.
[In a case where the DP firmware on the MR is updated]
Issue the "DPT" command.
[In a case where the DP firmware on the display is updated]
Issue the "DPR" command.
7. With the program for sending RS-232C commands, terminate the connection.
8. Start up the ISP Utility program and set up the ISP Settings screen.

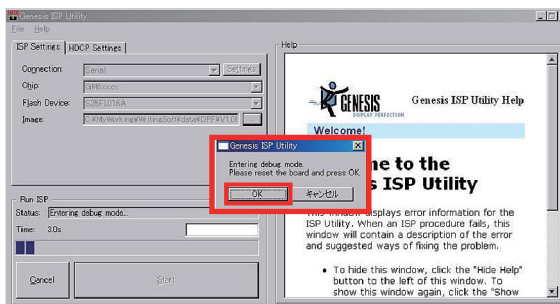


Connection: Serial
Chip: GM6xxxx
Flash Device: S25FL016A
Image: Select the ".hex" file to write to.

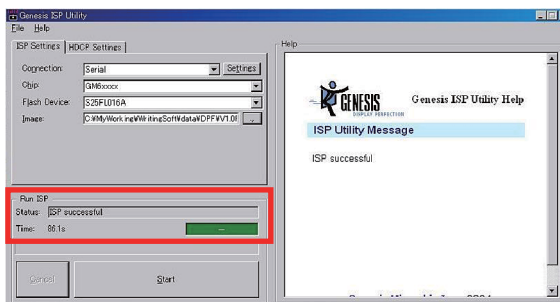
When "Serial" is selected in the "Connection" box, selection of Com ports is enabled. Click on "Settings" then select a Com port, according to the environment of the PC.



9. After all necessary settings are completed, click on Start to start updating.
10. When the following message is displayed, click on OK.

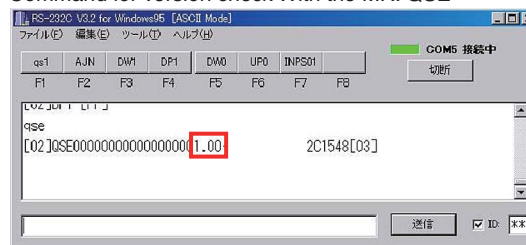


11. The current status is displayed in the "Status" box. When "ISP Successful" is displayed, updating is completed successfully.

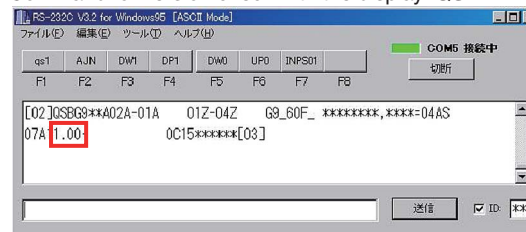


12. Terminate the utility program and turn the MR or display off then back on again.
With the program for sending RS-232C commands, reestablish the connection. Then send the command for version check.

Command for version check With the MR: QSE



Command for version check with the display: QSB



13. Check that the version has been properly updated. This completes the updating procedures.

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KRP-M01

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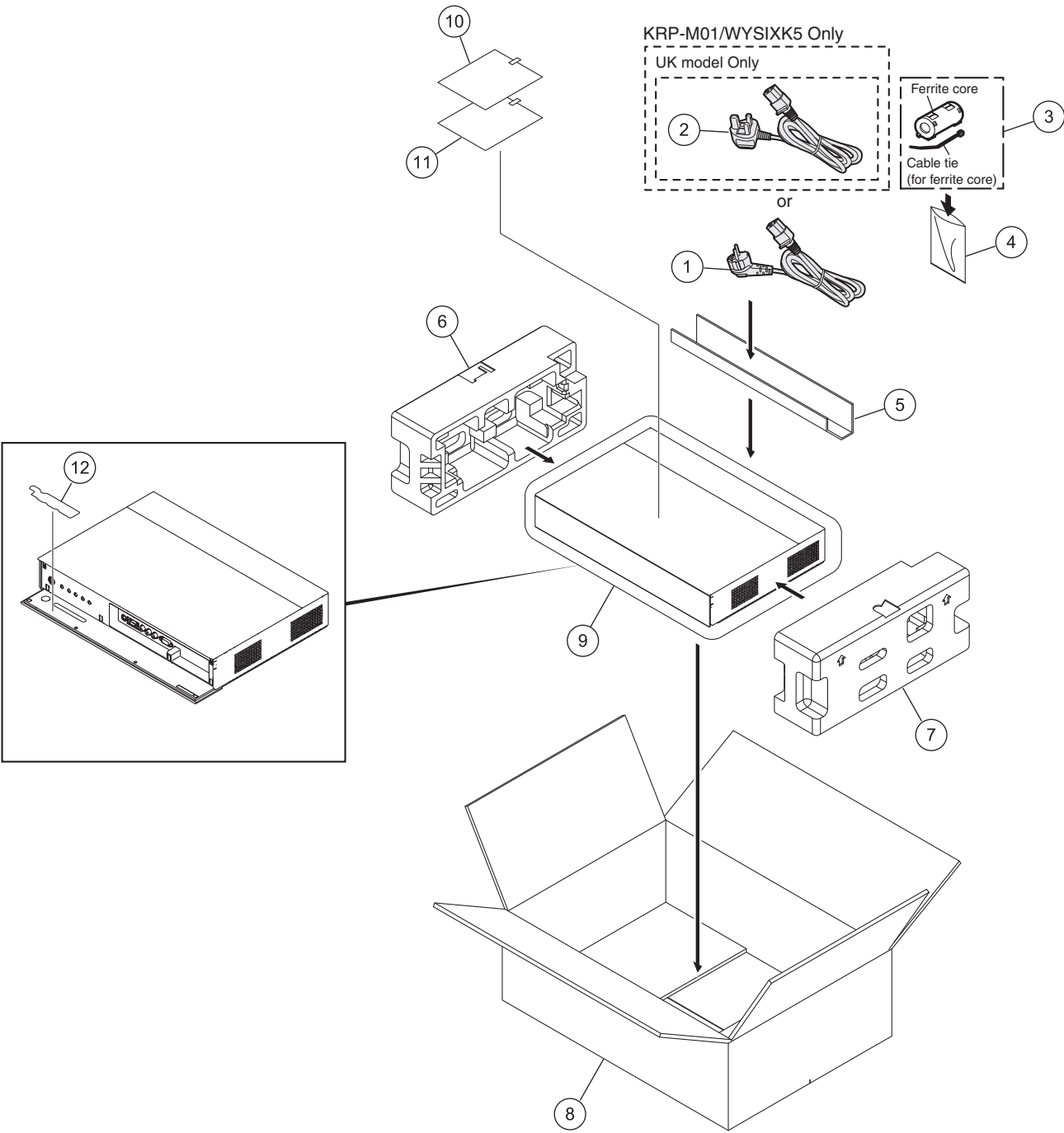
3

4

9. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
⚠	1	Power Cable	ADG1214
⚠	2	Power Cable	See Contrast table (2)
⚠	3	Ferrite Core (L5208)	ATX1039
	4	Vinyl Bag	AHG1337
	5	ACC Carton	See Contrast table (2)
	6	Pad L	See Contrast table (2)
	7	Pad R	See Contrast table (2)
	8	Carton	See Contrast table (2)
	9	Mirror Mat	AHG1420
	10	Caution Card	See Contrast table (2)
	11	Film Caution Card	See Contrast table (2)
	12	Protect Film	GGP1121

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>KRP-M01/WYSIXK5</u>	<u>KRP-M01/WYSXJ5</u>
⚠	2	Power Cable	ADG1223	Not used
	5	ACC Carton (E)	AHD3677	Not used
	5	ACC Carton (G)	Not used	AHD3679
	6	Pad L (E)	AHA2735	Not used
	6	Pad L (G)	Not used	AHA2739
	7	Pad R (E)	AHA2736	Not used
	7	Pad R (G)	Not used	AHA2740
	8	Carton (E)	AHD3674	AHD3725
	10	Caution Card	ARM1439	ARM1440
	11	Film Caution Card	ARM1448	ARM1449

9.2 EXTERIOR SECTION

A

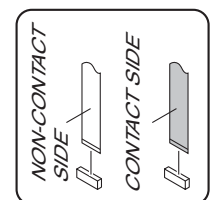
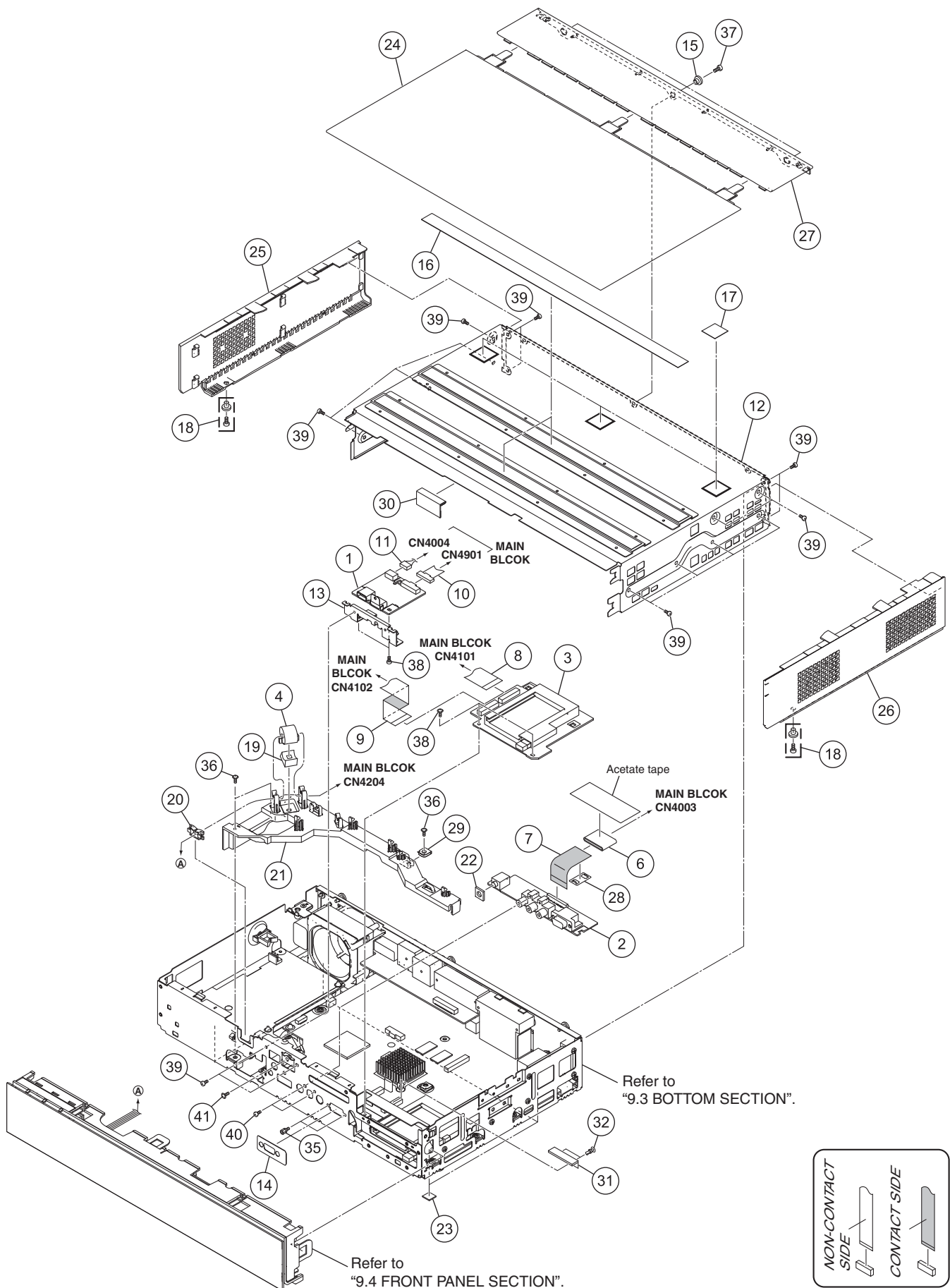
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(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FRONT_HDM_USB Assy	AWW1412	21	Center Frame	AMR3844
2	FRONT IO Assy	AWW1443	⚠ 22	Gasket HP	ANK1994
3	CI CARD Assy	AWW1444	23	Rubber Foot	VEB1349
⚠ 4	Ferrite Core (F1001)	ATX1034	24	Top Panel F	AAK2940
5	•••••		25	Side Panel L	AAK2941
⚠ 6	Ferrite Core (F1)	ATX1073	26	Side Panel R	AAK2942
7	Flexible Cable (J201)	ADD1564	27	Top Panel R	AAK2946
8	Flexible Cable (J204)	ADD1566	28	Ferrite Stopper	AEC1981
9	Flexible Cable (J205)	ADD1567	⚠ 29	Earth Plate MAIN	ANG3219
10	30P Shield FFC (J101)	ADF1042	⚠ 30	Gasket UP2	ANK1999
11	USB Cable (J102)	ADX3713	⚠ 31	Gasket CI	ANK1996
12	Upper Chassis Assy	See Contrast table (2)	32	Rivet A	BEC1158
13	PCB Holder	See Contrast table (2)	33	•••••	
14	Cover Sheet	AAK2850	34	•••••	
15	Collar	ABN1095	35	Hexagon Headed Screw	ABA1382
16	Upper Cushion	AEB1504	36	Screw	ABA1383
17	Top Cushion	AEB1505	37	Screw	ABA1391
18	Scrivet	AEC1657	38	Screw	ABZ30P060FTC
19	Ferrite Core Holder	AEC1818	39	Screw	BBZ30P060FTB
20	Edge Saddle	AEC1946	40	Screw	BPZ30P080FTB
			41	Screw (FE)	VBA1088

(2) CONTRAST TABLE

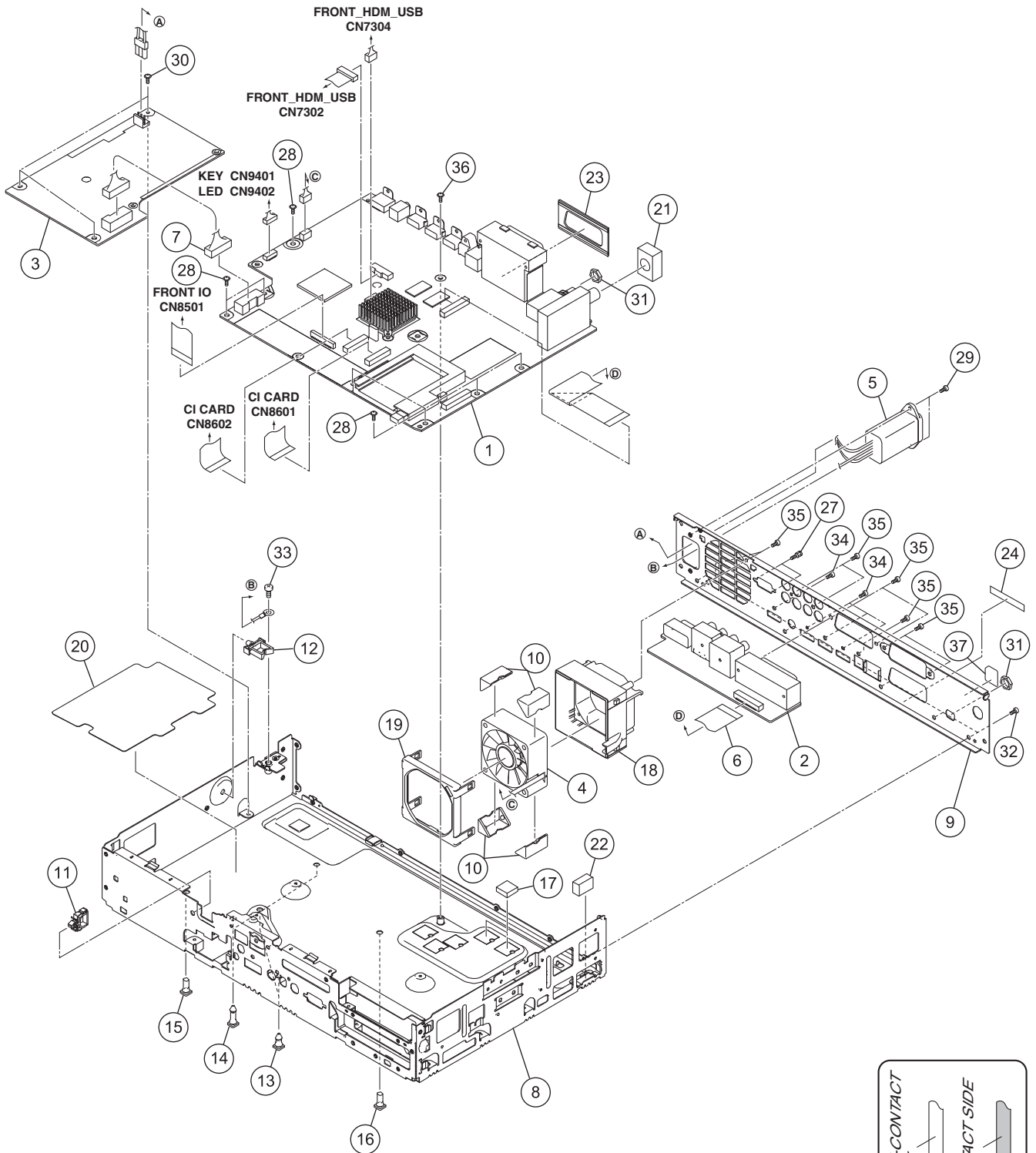
KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	12	Upper Chassis Assy	ANA2187	ANA2224
	13	PCB Holder	ANG3186	ANG3217

9.3 BOTTOM SECTION



Cleaning paper :
GED-008



(1) BOTTOM SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN BLOCK Assy	AWW1413	⚠	21	Gasket EU	ANK1972
	2	REAR IO Assy	AWW1441		22	Gasket MA	ANK1985
⚠	3	POWER SUPPLY Unit	AXY1204	⚠	23	Gasket SC	ANK1989
⚠	4	DC FAN Motor 60 x 25L	AXM1068	NSP	24	Serial Label	ARW1100
⚠	5	AC Inlet (CN1)	AKP1339		25	•••••	
	6	Flexible Cable (J203)	ADD1565		26	•••••	
	7	26P Housing Wire (J111)	ADX3674		27	Hexagon Headed Screw	ABA1382
	8	Base Chassis Assy	See Contrast table (2)		28	Screw	ABA1383
	9	Terminal Panel (E)	See Contrast table (2)		29	Screw	ABZ30P080FTB
	10	Floating Rubber 60	AEB1410		30	Screw	BBB30P080FSN
	11	Reuse Clamp	AEC2129		31	Washer Faced Nut	BBN1005
	12	Reuse Wire Saddle	AEC2134		32	Screw	BBZ30P060FTB
	13	Circuit Board Spacer	AEC2150		33	Screw	BMP40P080FSN
	14	Circuit Board Spacer	AEC2151		34	Screw	BMZ30P060FTB
	15	Circuit Board Spacer	AEC2152		35	Screw	BPZ30P080FTB
	16	Circuit Board Spacer	AEC2163		36	Screw	AMZ30P060FTB
	17	Silicon Sheet	AEH1182	NSP	37	Gost-R Label	ARW1126
	18	FAN Holder 60 A	See Contrast table (2)				
	19	FAN Holder 60 B	See Contrast table (2)				
	20	Insulation Sheet	AMR3891				

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	8	Base Chassis Assy	ANA2186	ANA2225
	9	Terminal Panel (E)	ANC2474	ANC2480
	18	FAN Holder 60 A	AMR3845	AMR3918
	19	FAN Holder 60 B	AMR3846	AMR3919

1 2 3 4

9.4 FRONT PANEL SECTION

A

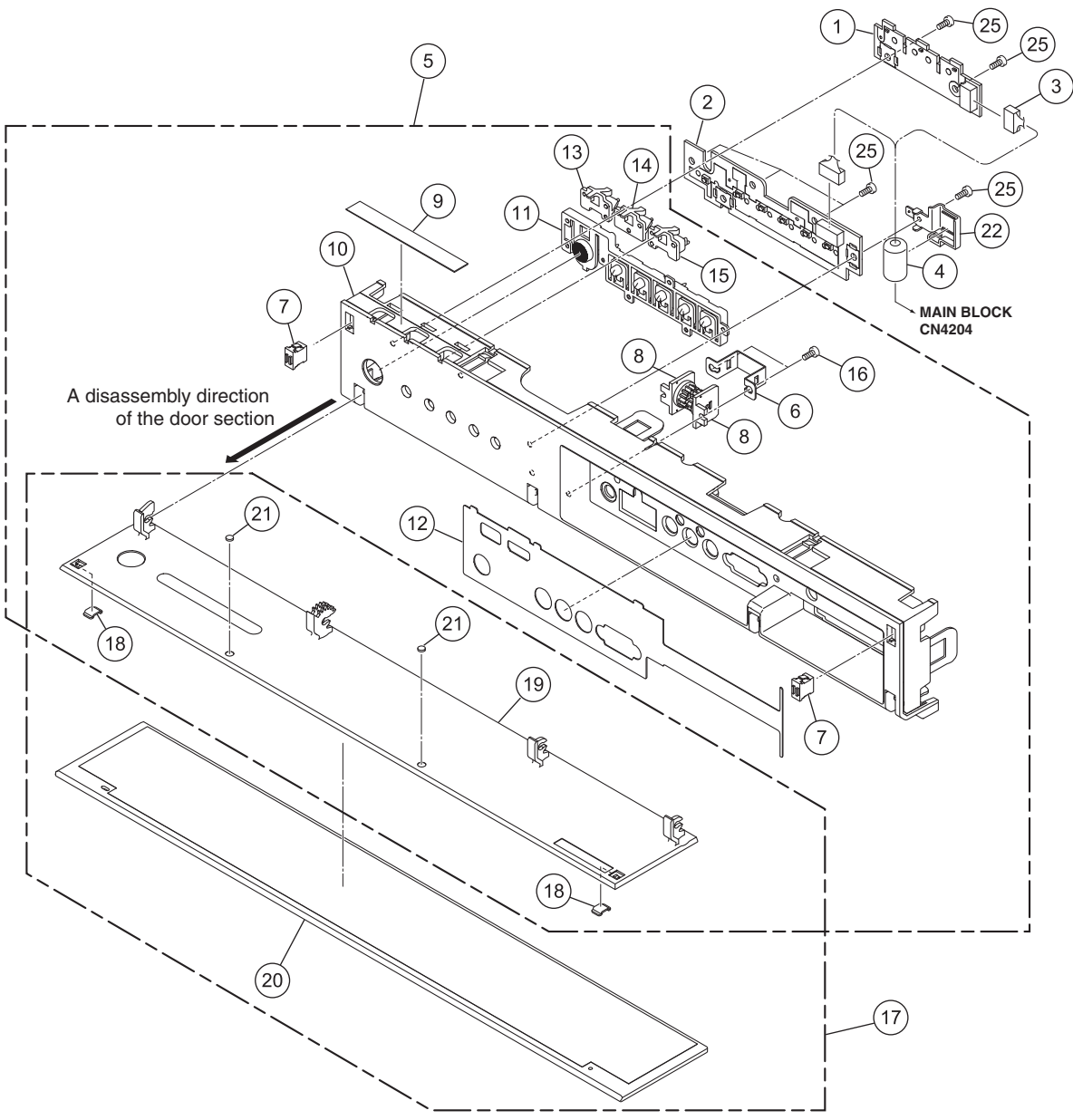
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FRONT PANEL SECTION PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>	
	1	LED Assy	AWW1442	
	2	KEY Assy	AWW1445	A
	3	20P Housing Wire (J112)	ADX3714	
⚠	4	Ferrite Core (F1002)	ATX1069	
	5	F Panel Assy (EU)	AMB3114	
NSP	6	Damper Holder	ANG3198	
	7	Magnet Holder Assy	AEC1077	■
	8	Damper	AXA1022	
NSP	9	Shading Sheet	AMR3903	
NSP	10	Front Panel	AMB3083	
NSP	11	Control Button	AAD4160	B
	12	Input Sheet (E)	AAL3037	
NSP	13	Front LED Lens L	AMR3841	
NSP	14	Front LED Lens C	AMR3904	
NSP	15	Front LED Lens R	AMR3905	
	16	Screw	BPZ30P080FTB	■
	17	Door Panel Service Kit	GXX1283	
	18	Door Catcher	•••••	
	19	Door Base	•••••	
	20	Door Panel	•••••	
	21	Door Cushion	AED1337	C
	22	Ferrite Holder	AMR3925	
	23	•••••		
	24	•••••		
	25	Screw	BPZ30P080FTB	■
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				E
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■ When Replacing the F PANEL Assy (E)

When replacing the F PANEL Assy (E), discard the following parts of the new Assy kit for service and use the parts from the original door panel:

No.18	Door catcher
No.19	Door base
No.21	Door cushion

■

■ Reassembly Procedures for the Door Panel Service Kit

• Component parts of the GXX1283 Door Panel Service Kit

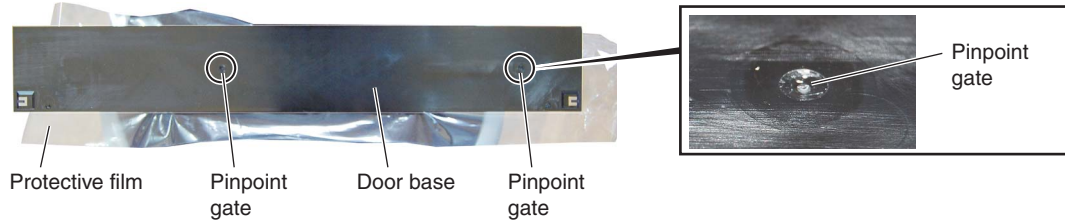
B

No.18	Door catcher (x2)
No.19	Door base (x1)
No.20	Door panel (x1)
No.21	Door cushion (x2)

■

- ① Check that two marks of pinpoint gates do not protrude from the surface of the door base to which the door panel is to be attached.
Do NOT peel off the protective film of the door base in this step.
Peel it off after all the reassembly procedures are completed.

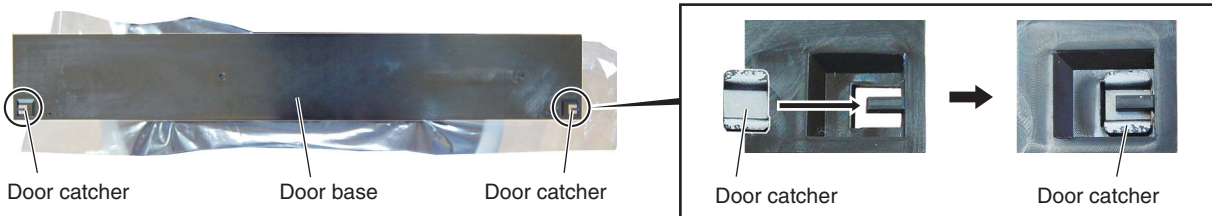
C



■

- ② Attach the two door catchers.

D



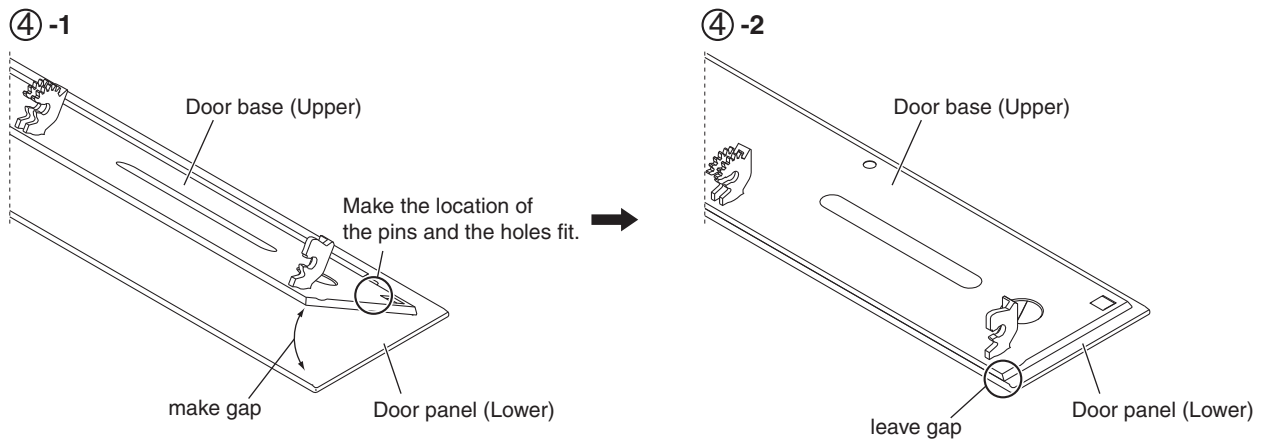
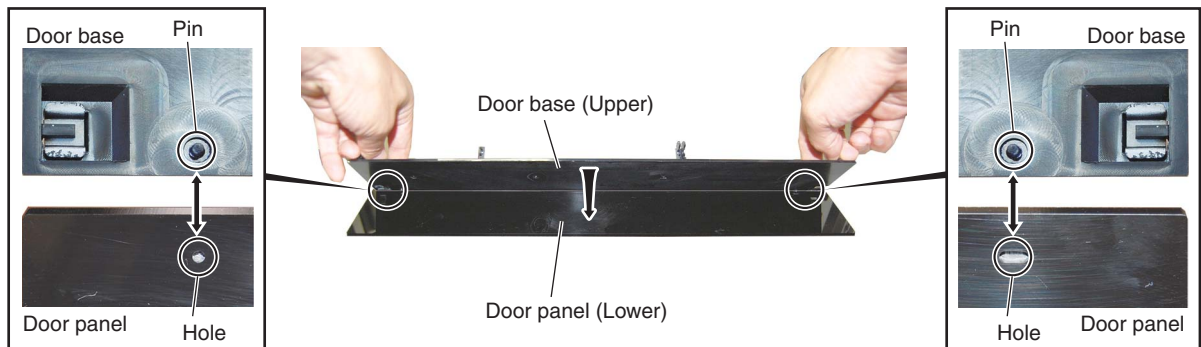
■

- ③ Peel off the separator of double-back tape on the door panel.
Do NOT peel off the protective film on the exterior surface of the door panel in this step.
Peel it off after all the reassembly procedures are completed.

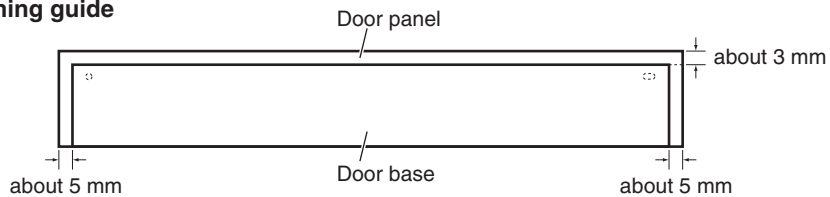
E

F

- ④ Align the two positioning pins of the door base with the holes in the door panel.
When positioning, leave gaps between the door panel and door base, as shown in the figure below:



Positioning guide



- ⑤ Stick the door base and door panel together, by pressing them all over.

- ⑥ Attach the two door cushions.

Service Manual



KRP-M01

ORDER NO.
ARP3508

MEDIA RECEIVER

KRP-M01

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
KRP-M01	WYSIXK5	AC 220 V to 240 V	
KRP-M01	WYSXJ5	AC 220 V to 240 V	

This service manual should be used together with the following manual(s).

Model No.	Order No.	Remarks
KRP-M01	ARP3509	SCHEMATIC DIAGRAM, PCB CONNECTION DIAGRAM, PCB PARTS LIST, etc.



For details, refer to "Important Check Points for good servicing".

1 2 3 4

SAFETY INFORMATION

!

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains certain electrical parts contain chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

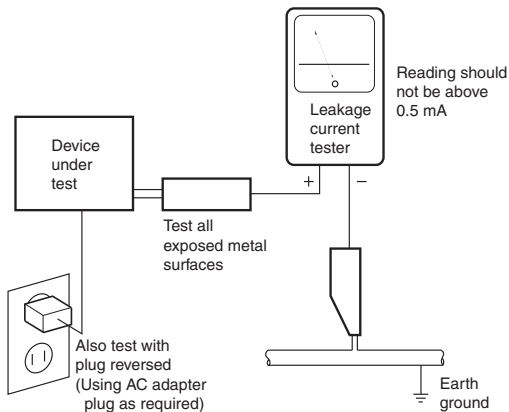
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120 V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C. Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

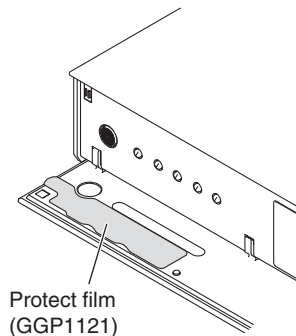
The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

1.2 NOTES SPECIFIC TO THIS PRODUCT

1. Notes before starting repair

- The high-gloss resin parts of the exterior of this product are easily scratched. During disassembly and reassembly of this product, be careful not to scratch the exterior.
- If the door of this product is pressed firmly from the front or when the KEY Assy and LED Assy are reassembled, print of the front-panel operating section may be transferred to the inside surface of the door. To avoid this, be sure to attach the protect film to the inside surface of the door before repairing. If protect film is not available, slip a cleaning cloth or the like inside the door for protection.
- Remove the attached protect film after product installation is completed. If the repaired product is to be delivered to the customer's home or a dealer, leave the protect film attached.



2. Note on Disassembly/Reassembly

1) Fixing screws for the HDMI connector and system cable connector

For tightening the screws for the HDMI connector and system cable connector, do not use an electric screwdriver. Tighten them manually. If they are tightened too forcefully with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be loosened/tightened any more.

2. SPECIFICATIONS

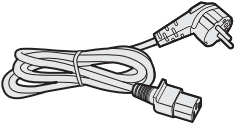
2.1 ACCESSORIES

A

• Power cable

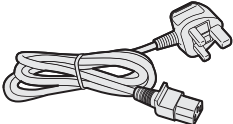
Only the power cable appropriate for your country or region is supplied:

(ADG1214)



For Europe, except UK and Republic of Ireland

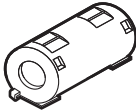
(ADG1223)




For UK and Republic of Ireland

WYSIXK5 only

• Ferrite core (ATX1039)



Ferrite core



Cable tie
(for ferrite core)

C

D

E

F

2.2 SPECIFICATIONS

Item			Media Receiver, model: KRP-M01
Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
TV Function (Analogue)	Receiving System		B/G, D/K, I, L, L'
	Tuner	VHF/UHF	E2–E69 ch, F1–F6 ch, I21–I69 ch, IR A–IR J ch
		CATV	Hyper-band, S1–S41 ch
	Auto Channel Preset		99 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		NICAM/A2
TV Function (Digital)	Receiving System		DVB-T(2K/8K COFDM)
	Tuner	VHF/UHF	VHF Band III (170 MHz to 230 MHz) and UHF Band IV, V (470 MHz to 862 MHz)
		Auto Channel Preset	999 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
TV Function (Satellite)	Receiving System		DVB-S, DVB-S2
	IF Tuner		950 MHz to 2150 MHz
	Auto Channel Preset		5000 ch, Auto Preset, Auto Label, Auto Sort
	STEREO		MPEG layer I/II, Dolby Digital, Dolby Digital Plus, HE-AAC v1
Terminals	Rear	INPUT 1	SCART (AV in, RGB in, TV out), HDMI in ^{*1}
		INPUT 2	SCART (AV in/out, S-Video in, AV link ^{*2}), Component Video in, AUDIO in
		INPUT 3	SCART (AV in/out, S-Video in, RGB in, AV link ^{*2}), HDMI in ^{*1}
		INPUT 4	HDMI in ^{*1}
		CONTROL OUT	1
		SYSTEM CABLE	1
		Antenna	75 Ω Din Type for VHF/UHF in/SAT (Satellite) in
		AUDIO OUT	AUDIO out (Fixed)
		SUB WOOFER OUT	Variable
		DIGITAL OUT	Digital audio output (Optical)
		LAN (10/100)	1
	Front	INPUT 5	Video in, HDMI in ^{*1}
		PC INPUT	Analogue RGB
		INPUT 5/PC INPUT	Audio in
		USB	USB in ^{*3}
		PHONES	16 Ω to 32 Ω recommended
		COMMON INTERFACE	2, CA Module
		Power Requirements	220 V to 240 V AC, 50 Hz/60 Hz, 52 W (0.4 W Standby)
	Weight		4.5 kg (9.9 lbs)

*1 This conforms to HDMI 1.3 (Deep Colour) and HDCP1.1. HDMI (High-Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

*2 Switchable from menu.

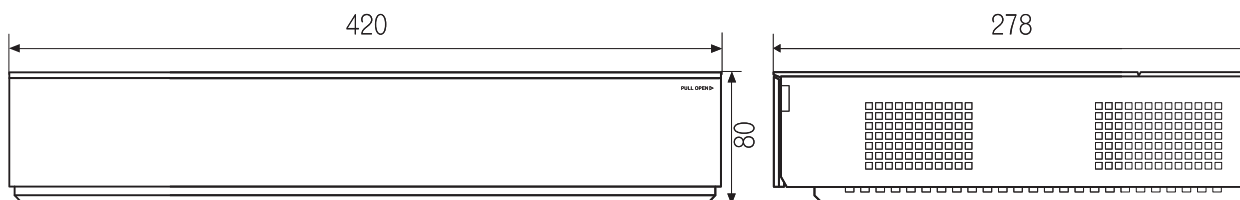
*3 This conforms to USB 1.1 and 2.0 specifications.

Design and specifications are subject to change without notice.

Dimensions (Media Receiver)

KRP-M01

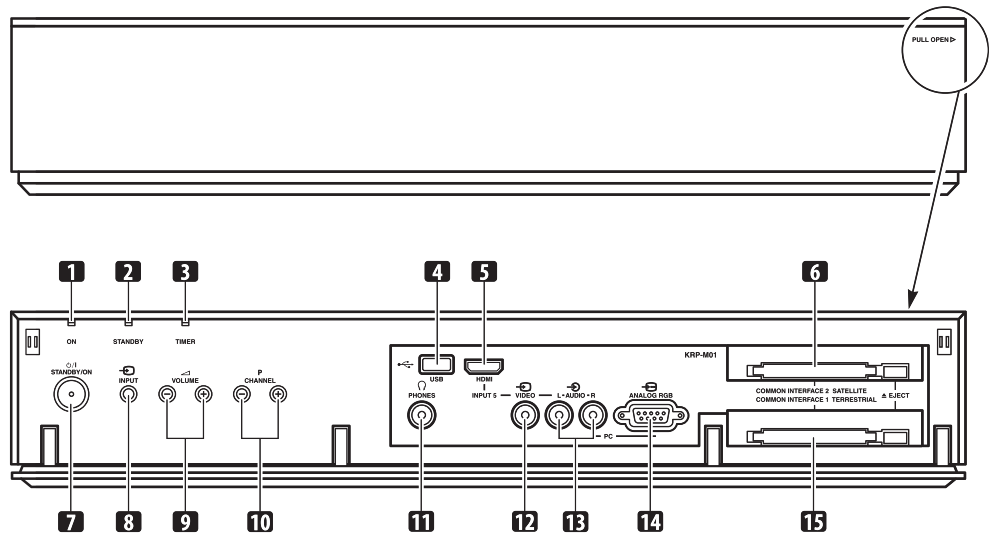
Unit: mm



KRP-M01

A

(Front)



- C

1

2

3

4

5

6

7

8

Power ON indicator

STANDBY indicator

TIMER indicator

USB port

INPUT 5 terminal (HDMI)

COMMON INTERFACE 2 SATELLITE slot

STANDBY/ON button

INPUT button
- 9

10

11

12

13

14

15

VOLUME Up/Down buttons

CHANNEL Up/Down buttons

PHONES output terminal

INPUT 5 terminal (Video)

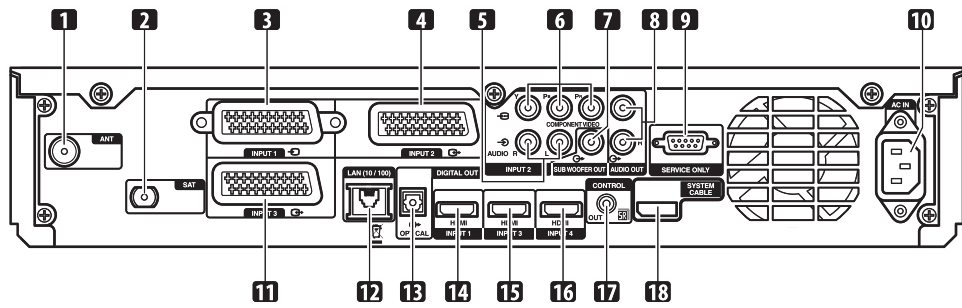
INPUT 5/PC INPUT terminals (Audio)

PC INPUT terminal (Analogue RGB)

COMMON INTERFACE 1 TERRESTRIAL slot

D

(Rear)



- E

1

2

3

4

5

6

7

8

9

ANT (Antenna) input terminal

SAT (Satellite) input terminal

INPUT 1 terminal (SCART)

INPUT 2 terminal (SCART)

INPUT 2 terminals (Audio)

INPUT 2 terminals (COMPONENT VIDEO: Y, P_B, P_R)

SUB WOOFER OUT terminal

AUDIO OUT terminals

RS-232C terminal (SERVICE ONLY)
(used for factory setup)
- 10

11

12

13

14

15

16

17

18

AC IN terminal

INPUT 3 terminal (SCART)

LAN (10/100) port

DIGITAL OUT terminal (OPTICAL)

INPUT 1 terminal (HDMI)

INPUT 3 terminal (HDMI)

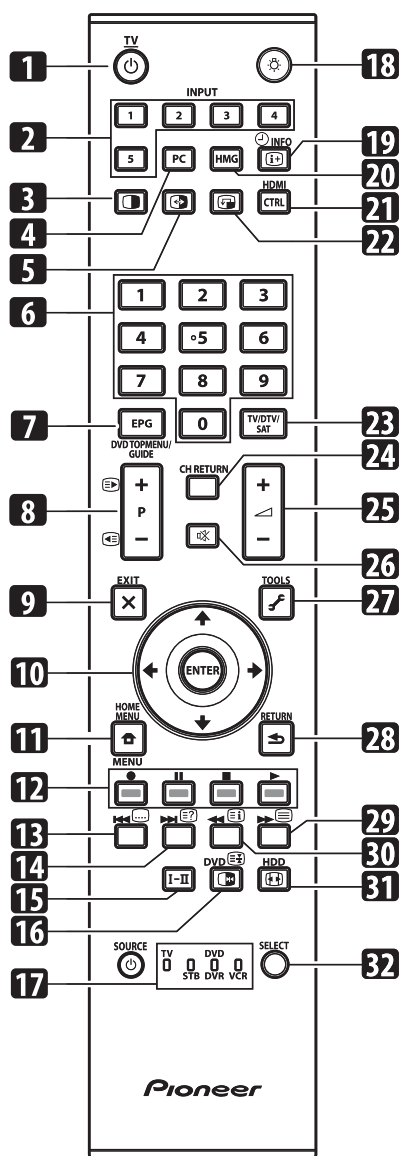
INPUT 4 terminal (HDMI)

CONTROL OUT terminal

SYSTEM CABLE terminal

Remote Control Unit

This section describes the functions of the buttons available when the TV mode has been selected by using the **SELECT** button.



- 1 **TV** : Turns on the power to the flat screen TV or places it into the standby mode.
- 2 **INPUT**: Selects an input source of the flat screen TV. ("INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4", "INPUT 5")
- 3 **PICTURE**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
- 4 **PC**: Selects the PC terminal as an input source.
- 5 **PICTURE**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

- 6 **0 to 9**: TV/External input mode: Selects a channel. Teletext mode: Selects a page. Turns the power on when the STANDBY indicator lights red.
- 7 **EPG**: Displays the Electronic Programme Guide in DTV/SAT (Satellite) input mode.
- 8 **P+/P-**: TV/External input mode: Selects a channel. **ENTER**: Teletext mode: Selects a page.
- 9 **X EXIT**: Returns to the normal screen in one step.
- 10 **UP/DOWN/LEFT/RIGHT**: Selects a desired item on the setting screen. **ENTER**: Executes a command.
- 11 **HOME MENU**: Displays the HOME MENU screen.
- 12 **Colour (RED/GREEN/YELLOW/BLUE)**: Controls a BD player for HDMI Control functions only.
- 13 **...**: Jumps to Teletext subtitle page. Turns subtitle on and off in DTV input mode depending on the broadcast.
- 14 **?**: Displays hidden characters.
- 15 **I-II**: Sets the sound multiplex mode.
- 16 **PAUSE**: TV/External input mode: Freezes a frame from a moving image. Press again to cancel the function. **STOP**: Teletext mode: Stops updating Teletext pages. Press again to release the hold mode.
- 17 **TV, STB, DVD/DVR, VCR**: These indicators show the current selection and status when you control other connected equipment, using the supplied remote control unit.
- 18 **Light**: Lights up buttons. Lights turn off if no operations are performed within five seconds. This is used for remote control use in dark locations.
- 19 **INFO**: Displays the channel information. Displays the banner information.
- 20 **HMG (Home Media Gallery)**: Displays the Home Media Gallery screen.
- 21 **HDMI CTRL**: Displays the HDMI Control menu.
- 22 **PICTURE**: Moves the location of the small screen when in the picture-in-picture mode.
- 23 **TV/DTV/SAT**: Switches the mode among TV, DTV and SAT.
- 24 **CH RETURN**: Returns to the previous channel.
- 25 **+/-**: Sets the volume.
- 26 **MUTE**: Mutes the sound.
- 27 **TOOLS**: Displays the TOOLS Menu.
- 28 **RETURN**: Restores the previous menu screen.
- 29 **TEXT**: Selects the Teletext mode (all TV image, all TEXT image, TV/TEXT image).
- 30 **INDEX**: Displays an Index page for the CEEFAX/FLOF format. Displays a TOP Over View page for the TOP format.
- 31 **SIZE**: Selects the screen size.
- 32 **SELECT**: Switches the selection among TV, STB, DVD/DVR, and VCR, so that you can control other connected equipment, using the supplied remote control unit.

Note

- When using the remote control unit, point it at the display panel.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

A Items to be checked after repair (PDP)

To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

D Cleaning



Name	Part No.	Remarks
Cleaning paper	GED-008	Used to fan cleaning. Refer to “9.3 BOTTOM SECTION.”

3.2 QUICK REFERENCE

Quick Reference upon Service Visit ① Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① Rear case

When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "7. DISASSEMBLY".

② Attaching screws for the HDMI and system cable terminals

When attaching the HDMI and system cable terminals after replacing the Assembly, secure the terminals manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① How to discharge before replacing the Assys

A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:

A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.

For details, see "5.6 [1] PANEL DRIVE-POWER ON/OFF FUNCTION".

② On the settings after replacement of the Assys

Some boards need settings made after replacement of the Assys. For details, see "8. EACH SETTING AND ADJUSTMENT".

3. On various settings

① Setting in Factory mode

After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD		SD	
No. of LEDs flashing	MR	Panel	No. of LEDs flashing
Red 1	MR_POWER	SQ_LSI	Blue 1
	Panel	Module Device communication	Blue 2
Red 2	POWER	DIGITAL-RST2	Blue 3
Red 3	SCAN	Panel temperature	Blue 4
Red 4	SCN-5V	Audio	Blue 5
Red 6	Y-DCDC	Module microcomputer communication	Blue 6
Red 7	Y-SUS		Blue 7
Red 8	ADRS		Blue 8
Red 10	X-DCDC	Panel main IIC communication	Blue 9
Red 11	X-SUS		Blue 10
Red 12	DIG-DCDC	FAN	Blue 11
Red 15	UNKNOWN	Unit high temperature	Blue 12
			Blue 13
		DC-IN	Blue 14
		Panel main EEPROM	Blue 15

Special LED Patterns				Subcategory confirmation procedure		
Panel		MR		SD	SD Subcategory	
PD (2-15)		PD (1)		<div>If the DISPLAY key is pressed during shutdown, the orange LED flashes. (MR only)</div> <div>SD</div> <div><div><div>1</div><div>Tuner 1</div></div><div><div>2</div><div>MSP/MAP</div></div><div><div>3</div><div>AV Switch</div></div><div><div>4</div><div>RGB Switch</div></div><div><div>8</div><div>Main VDEC</div></div><div><div>6</div><div>VDEC-SDRAM</div></div><div><div>7</div><div>AD/PLL</div></div><div><div>8</div><div>HDMI</div></div><div><div>9</div><div>Display Port Tx</div></div><div><div>13</div><div>1</div><div>RS2T</div></div><div><div>2</div><div>RS4T</div></div></div>		
SD (1-15)		SD (7-15)				
System failure		Standalone operation (MRMS01)				
MR on standby (Red LED lit)		Rewriting of software (PC)				
Rewriting of software (PC)		Rewriting of software (USB)				
NO		After rewriting is completed successfully, the orange LED goes dark.				
BACKUP		Rewriting of software failed (USB)				
For special patterns other than described here, see 5.1[1].						
Commands for shifting between standalone and system operations					Other SD main categories have subcategories. For details, see 5.4[2].	
Panel		MR				
To Standalone operation: SYSS00		To Standalone operation: MRMS01				
To System operation: SYSS01		To System operation: MRMS00				
Note: After issuing a command, unplug then again plug in the AC power cord.						

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count

Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [↓] four times.)

2. Confirmation of the Power-down and Shutdown histories

① Panel system

PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] two times.)

SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] three times.)

② MR section

Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [↓] two times.)

③ Panel main section

Select {PANEL MAIN FACTORY} then {PM NG INFO}.
After entering Factory mode, press [MUTING] twice, then press [ENTER/SET].

3. How to display the Mask indication

① Mask indication in the panel side

- Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER/SET], then press [↓] 8 times.)
- Press [ENTER/SET], then select a Mask indication, using [↑] or [↓].

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. DIGITAL Assy (Panel): Transfer of backup data

- Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, then press [ENTER/SET].)
- Select {TRANSFER}, using [→], then hold [ENTER/SET] pressed for at least 5 seconds.
- After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

2. MAIN BLOCK Assy (MR), MAIN Assy (Panel): Execution of FINAL SETUP.

- Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER/SET]. (After entering Factory mode, press [MUTING] three times, then press [↓] four times.)
- Select "YES", using [→]. Then hold [ENTER/SET] pressed for at least 5 seconds.
- After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit (Panel): Clearance of the accumulated power-on count and maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER/SET], press [↓] seven times, press [ENTER/SET], then press [↓] six times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

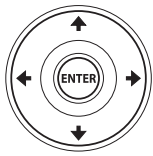
4. Other Assys (Panel): Clearance of the maximum temperature value

- Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [↓] seven times, press [ENTER/SET], then press [↓] seven times.)
- Press [→] to select "CLEAR". Hold [ENTER/SET] pressed for at least 5 seconds. After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②

Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



Up
↓
Down

- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [↑] or [↓].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER/SET]. To return to the next nested layer above, also press [ENTER/SET].

INFORMATION mode

1. VERSION (1)
2. VERSION (2)
3. VERSION (3)
4. MAIN NG
5. TEMPERATURE
6. HOUR METER
7. HDMI SIGNAL INFO 1
8. HDMI SIGNAL INFO 2
9. VDEC SIGNAL INFO 1
10. VDEC SIGNAL INFO 2



INITIALIZE mode

1. SIDE MASK LEVEL
2. FINAL SETUP
3. DTB SERVICE MENU
4. Wide XGA AUTO
5. AUTO ADJUSTMENT



OPTION mode

1. CH PRESET
2. Digital AFT
3. SYNC DET
4. CTI



PANEL MAIN FACTORY mode

1. PM NG INFO
2. PM STATE INFO.
3. DP_RX INFO.
4. PM_SETUP



PANEL FACTORY mode

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL FUNCTION
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP



Structure of Layers in Service Factory Mode

INFORMATION mode

- 1. VERSION (1)
- 2. VERSION (2)
- 3. VERSION (3)
- 4. MAIN NG
 - 4-1. CLEAR
- 5. TEMPERATURE
- 6. HOUR METER
- 7. HDMI SIGNAL INFO 1
- 8. HDMI SIGNAL INFO 2
- 9. VDEC SIGNAL INFO 1
- 10. VDEC SIGNAL INFO 2

The software versions for each microcomputer
The Flash memory versions for each device
The software versions for display microcomputer
The shutdown message ID/event times
(Going Clear mode by [ENTER/SET] key)
Select Yes by [→] key → pushing and hold [ENTER/SET] key
The temperature/FAN rotating status
The HOUR METER/P-COUNT information
The information of HDMI information files
The information of HDMI information files
The signal information of VDEC
The signal information of VDEC

PANEL FACTORY mode

Refer to [PANEL FACTORY MODE]

PANEL MAIN FACTORY mode

- 1. PM NG INFO.
- 2. PM STATE INFO.
- 3. DP_RX INFO.
- 4. PM_SETUP

Shutdown history of the panel main
The temperature/FAN rotating status/Room Light Sensor
Indication of the DPRx ID
Select the bezel color and clear the shutdown history of the panel main

OPTION mode

- 1. CH PRESET
- 2. Digital AFT
- 3. SYNC DET
- 4. CTI

For production line use
For production line use
For technical analysis
For technical analysis

INITIALIZE mode

- 1. SIDE MASK LEVEL
 - 1-1. SIDE MASK LEVEL
- 2. FINAL SETUP
 - 2-1. DATA RESET
- 3. DTB SERVICE MODE
 - 3-1. MODE SHIFT
- 4. Wide XGA AUTO
- 5. AUTO ADJUSTMENT

For factory use
Set to Factory default settings (it should perform after replacing a MAIN Assy)
Information for the Digital Tuner Service Menu is displayed
For technical analysis

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ (+)
 1. VOL SUS
 2. VOL OFFSET
 -
 10. RESET1ST_KSB
 -
 25. SUS FREQ
6. PANEL-2 ADJ (+)
 1. R-HIGH
 2. G-HIGH
 -
 6. B-LOW
 7. ABL
7. PANEL FUNCTION (+)
 1. R-LEVEL
 -

Version indication of the panel
Indications of the accumulated power-on time and power-on count of the panel
Indication of the Power-down history
Indication of the Shutdown history

Settings required after replacement of the panel

Items for factory use

For AM noise prevention (Depending on the mode, brightness of the screen changes.)
For confirmation of the result of the setting change, the unit must be turned off then back on again.

For the WB adjustment of the panel and ABL adjustment.
A setting table is available for each signal frequency.

Items for factory use

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

8. ETC (+)
 1. BACKUP DATA
 2. DIGITAL EEPROM
 3. PD INFO.
 4. SD INFO.
 5. HR-MTR INFO.
 6. PM/B1-B5
 7. P COUNT INFO.
 8. MAX TEMP.
 9. MIRROR
 10. CLS
9. RASTER MASK SETUP (+)
 1. MASK OFF
 2. RST MASK 01
 -
10. PATTERN MASK SETUP (+)
 1. MASK OFF
 2. PTN MASK 01
 -
11. COMBI MASK SETUP (+)
 1. MASK OFF
 2. CMB MASK 01
 -

For transferring backup data (after replacement of the DIGITAL Assy)
Change the adjustment status of the DIGITAL Assy.

For clearance of data for the corresponding items.
The clearing method is the same: Select "CLEAR", then hold [ENTER/SET] pressed for at least 5 seconds.

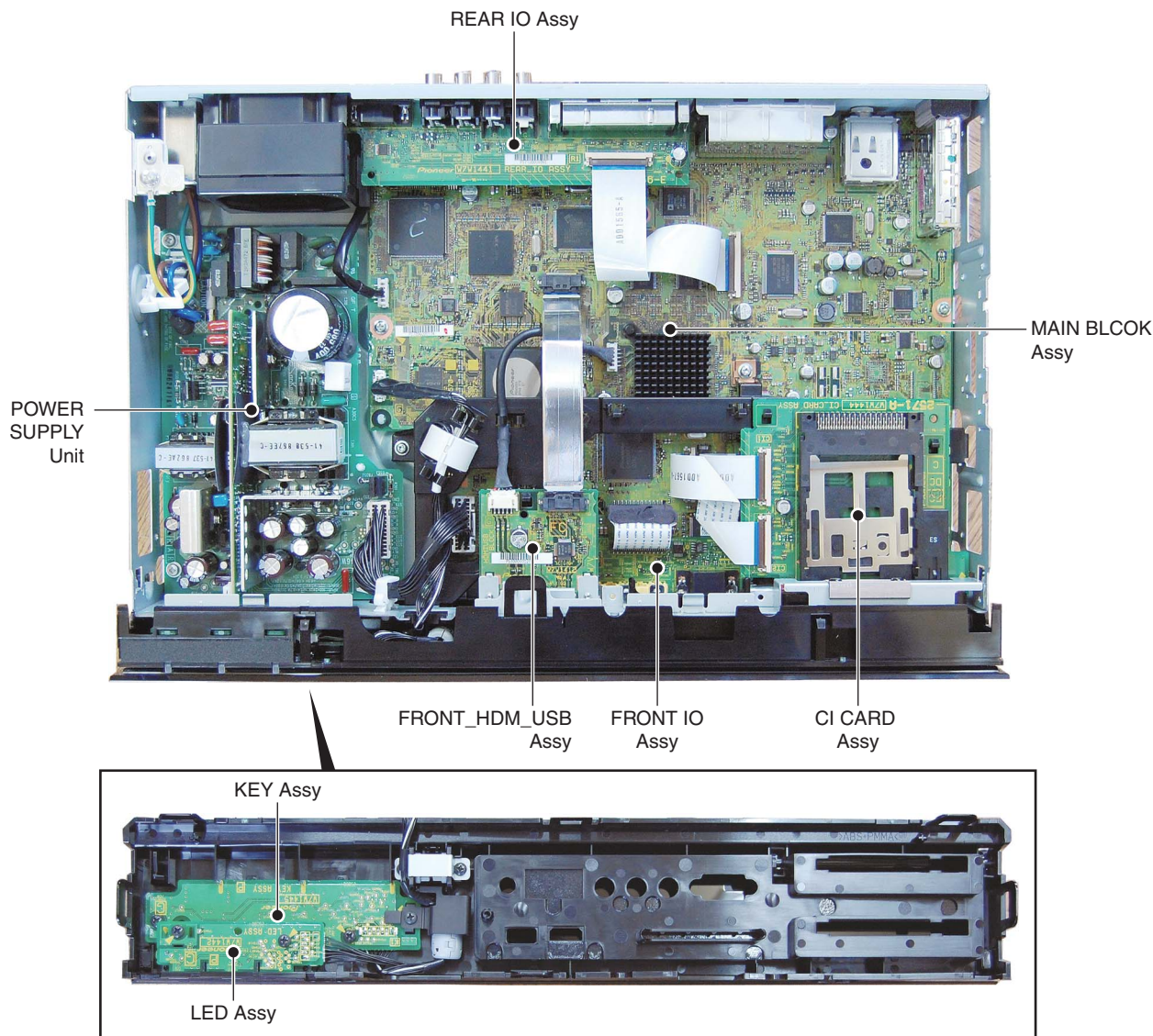
Switch the Mirror display mode.
Switch the function when checking the color sensor level.

For use while the Raster Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Pattern Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

For use while the Combination Mask is displayed.
Use [↑] or [↓] to select the type of mask.
Use [→] or [←] to select the sequence.

Note: The wiring shown in the photo is different from the actual wiring, because the product in the photo is a prototype. Upon servicing, be sure to restore the original wiring of the unit after repair work.

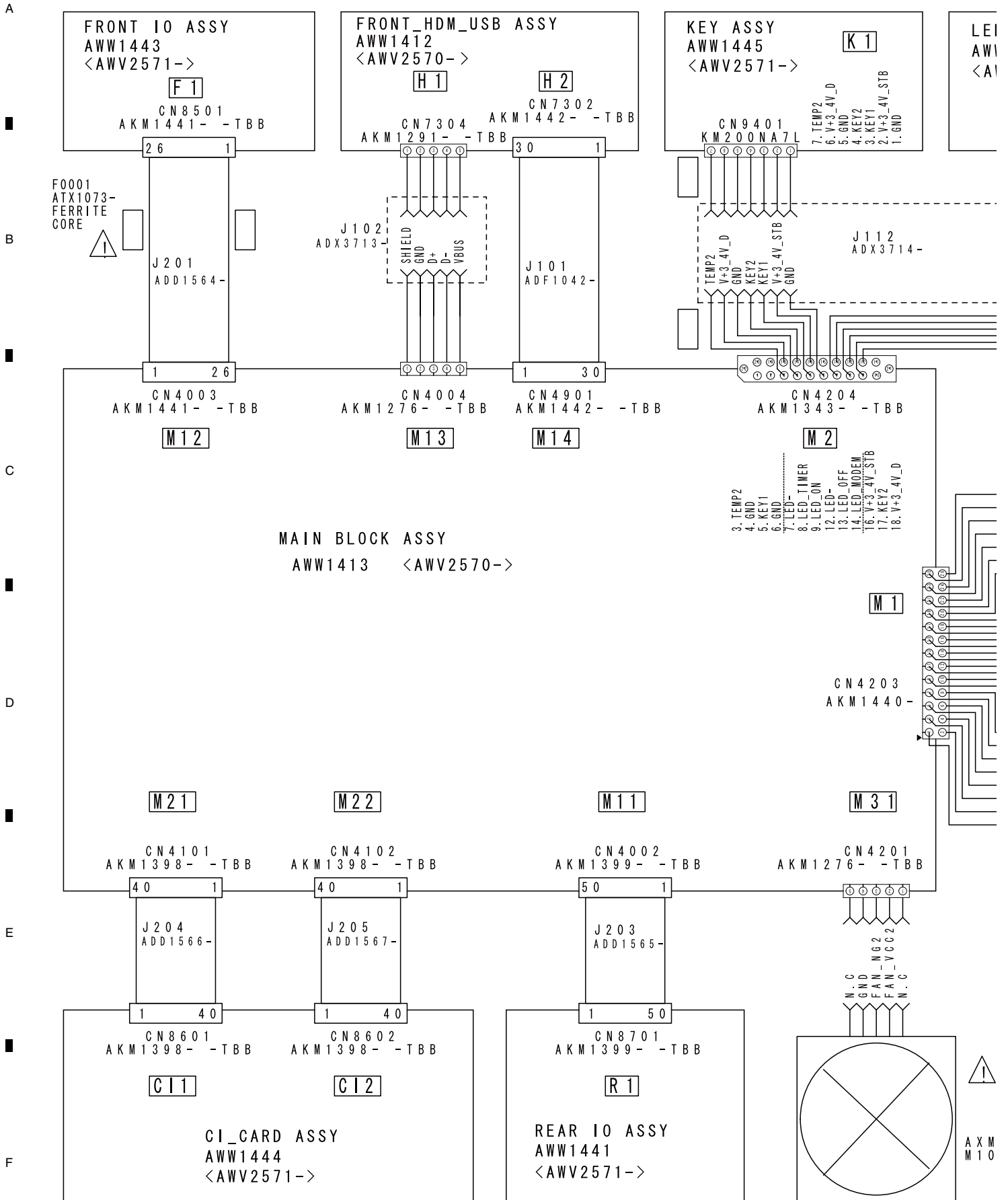


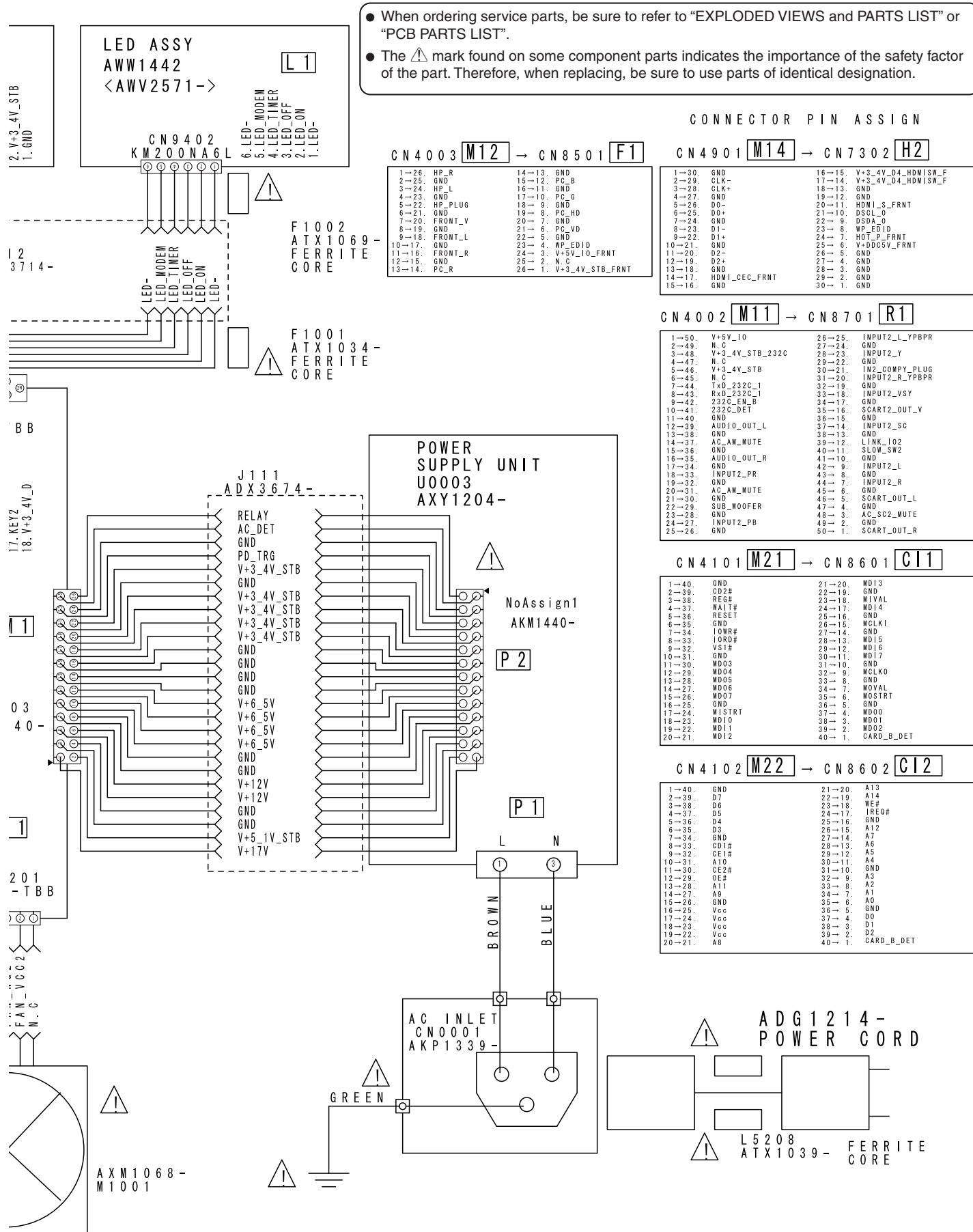
NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Mark No.	Description	Part No.	Mark No.	Description	Part No.
LIST OF ASSEMBLIES					
NSP	1..MAIN ASSY	AWV2570	NSP	1..FUKUGO ASSY	AWV2571
	2..FRONT_HDM_USB ASSY	AWW1412		2..REAR IO ASSY	AWW1441
	2..MAIN BLOCK ASSY	AWW1413		2..LED ASSY	AWW1442
				2..FRONT IO ASSY	AWW1443
				2..CI CARD ASSY	AWW1444
				2..KEY ASSY	AWW1445
			⚠	1..POWER SUPPLY UNIT	AXY1204

4. BLOCK DIAGRAM

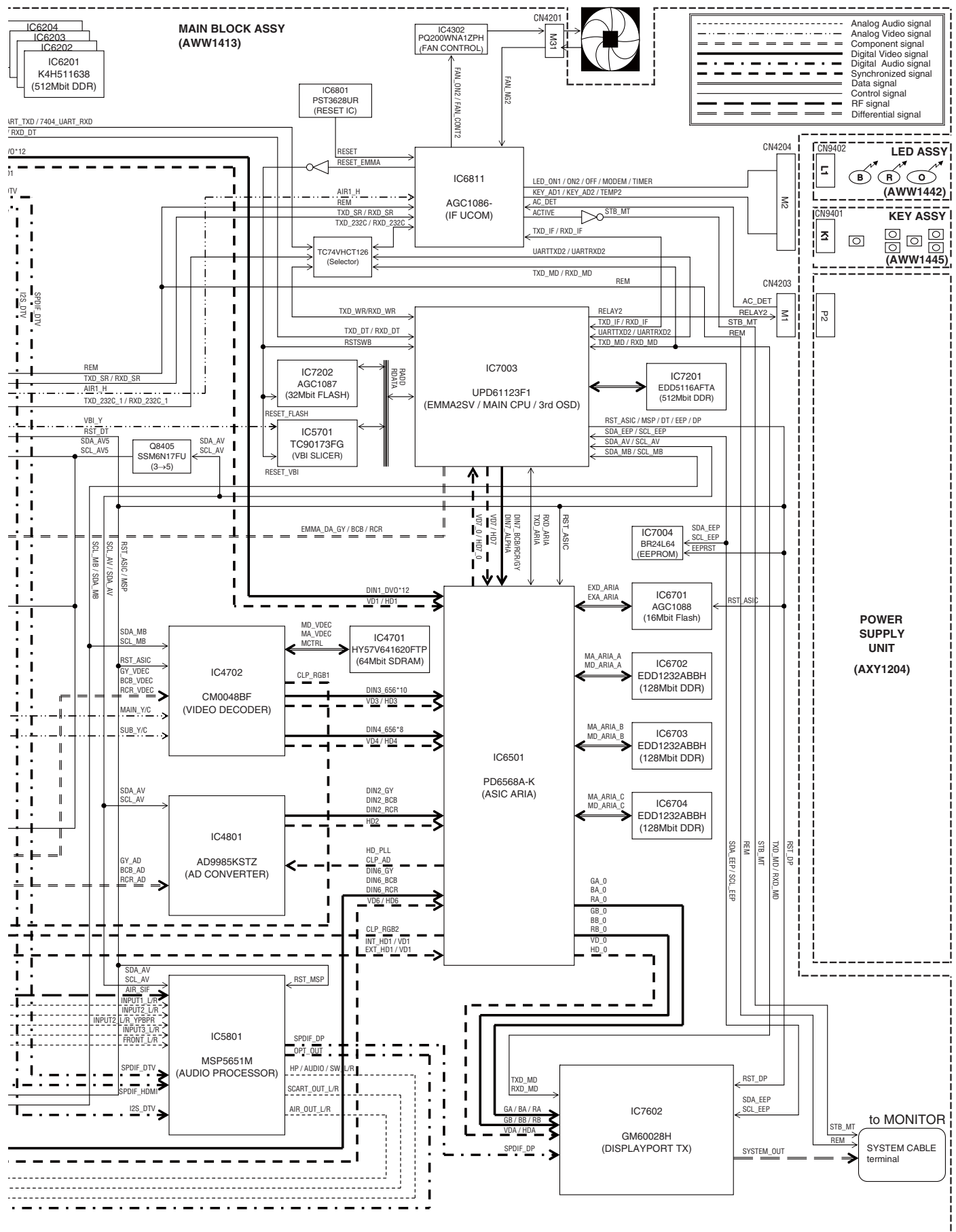
4.1 OVERALL WIRING DIAGRAM





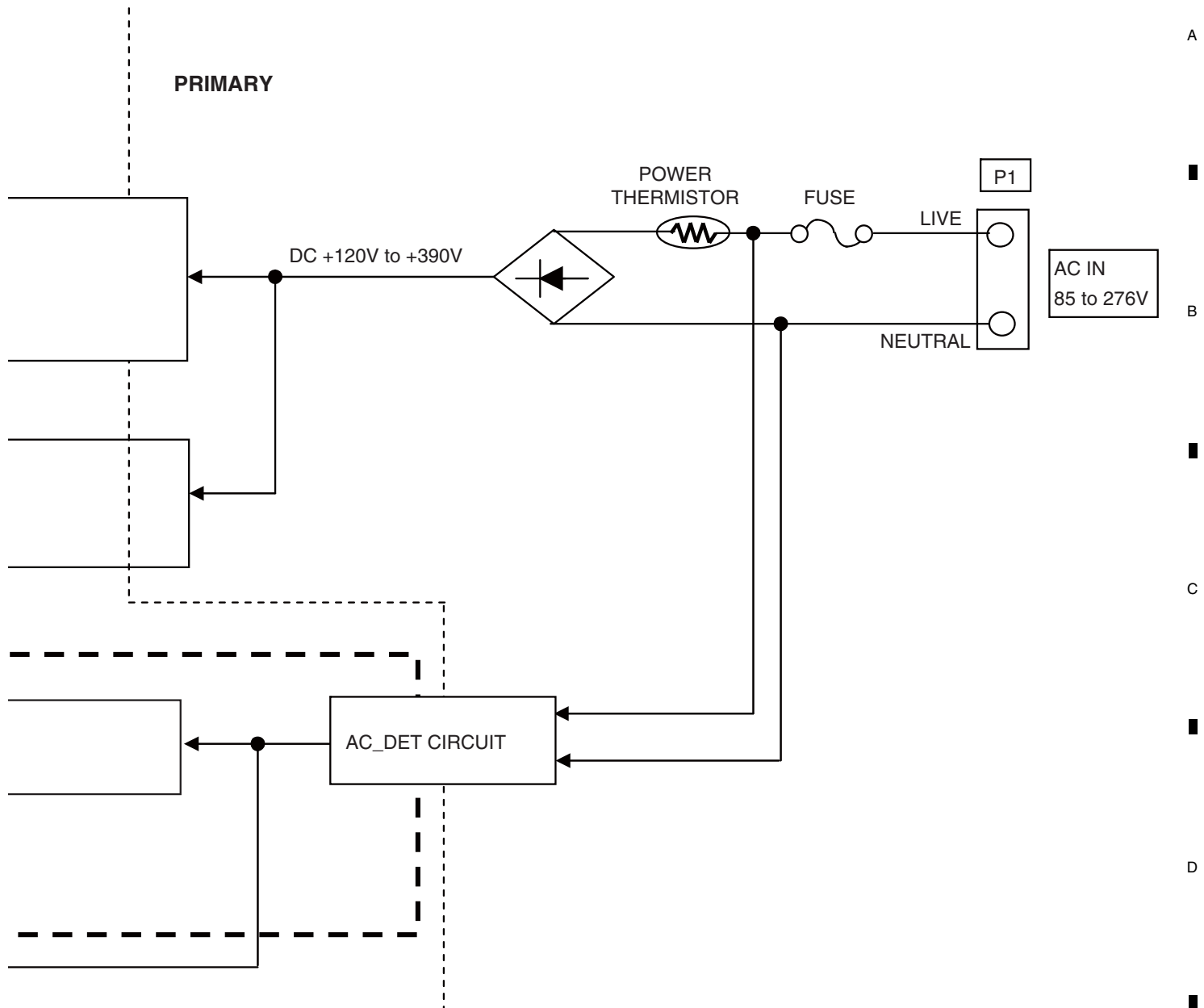
△



OVERALL DIAGRAM
KRP-M01

4





Logic Signal Specifications

[Logic level] H: STB3.4 V × (0.8 to 1.1), L: ≤ STB3.4 V × 0.2

Signal Name	I/O	Function	Logic		Description
RELAY	IN	Relay ON/OFF	H	ON	For controlling ON/OFF of all output signals other than STB signals
			L	OFF	
			Open	OFF	
PD_TRG	OUT	Determination of abnormality inside the POWER SUPPLY Unit	H	Determination of abnormality	For sending a deterministic signal when an abnormality is generated inside the POWER SUPPLY Unit to shut off any output signals other than STB signals
			L	Normal	
AC_DET	OUT	AC detection	H	Present	For detecting the presence of the AC input voltage, regardless of ON/OFF of STB 3.4 V output
			L	Absent	

4.4 POWER SUPPLY BLOCK of MAIN BLOCK ASSY

A

B

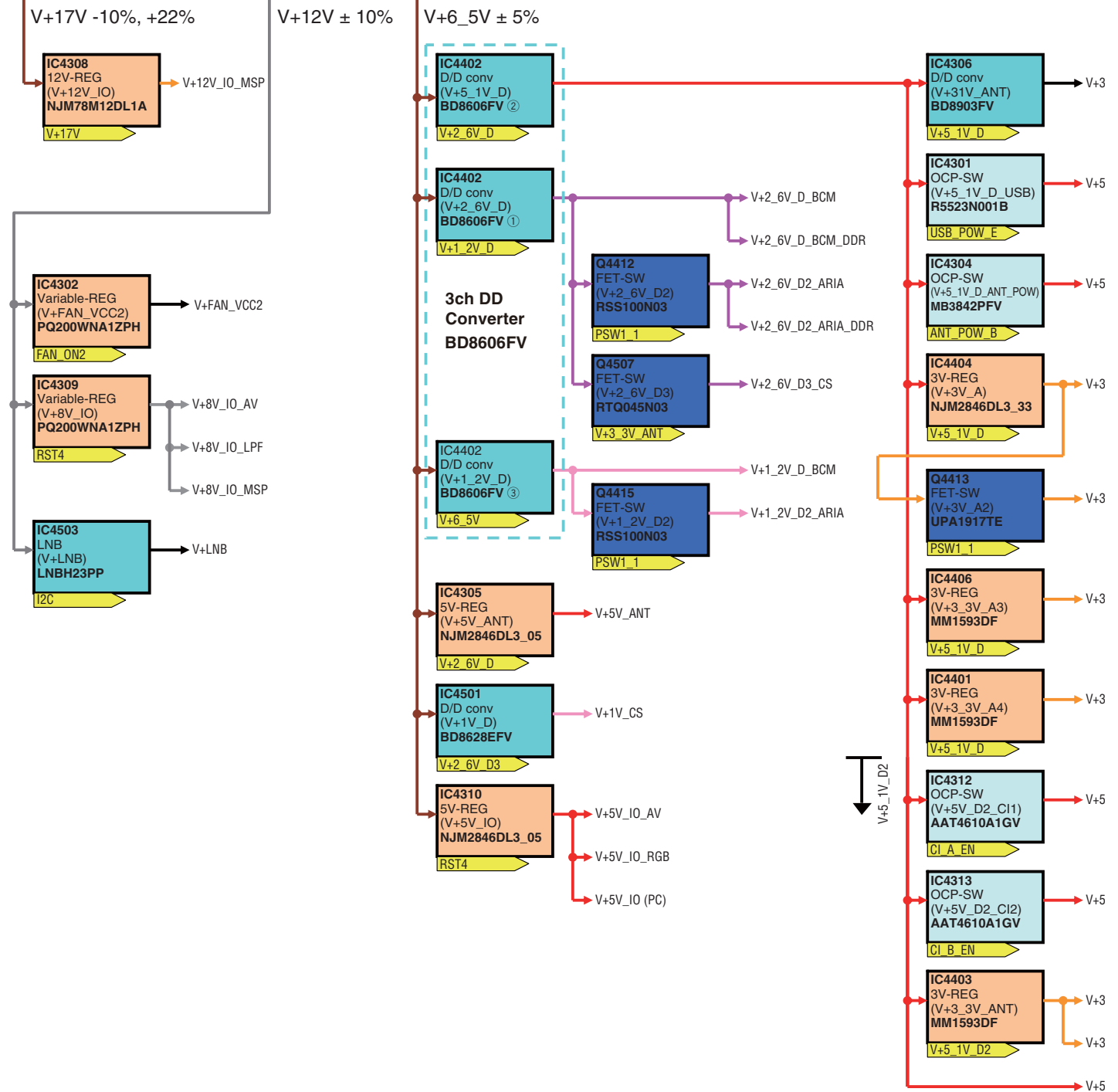
C

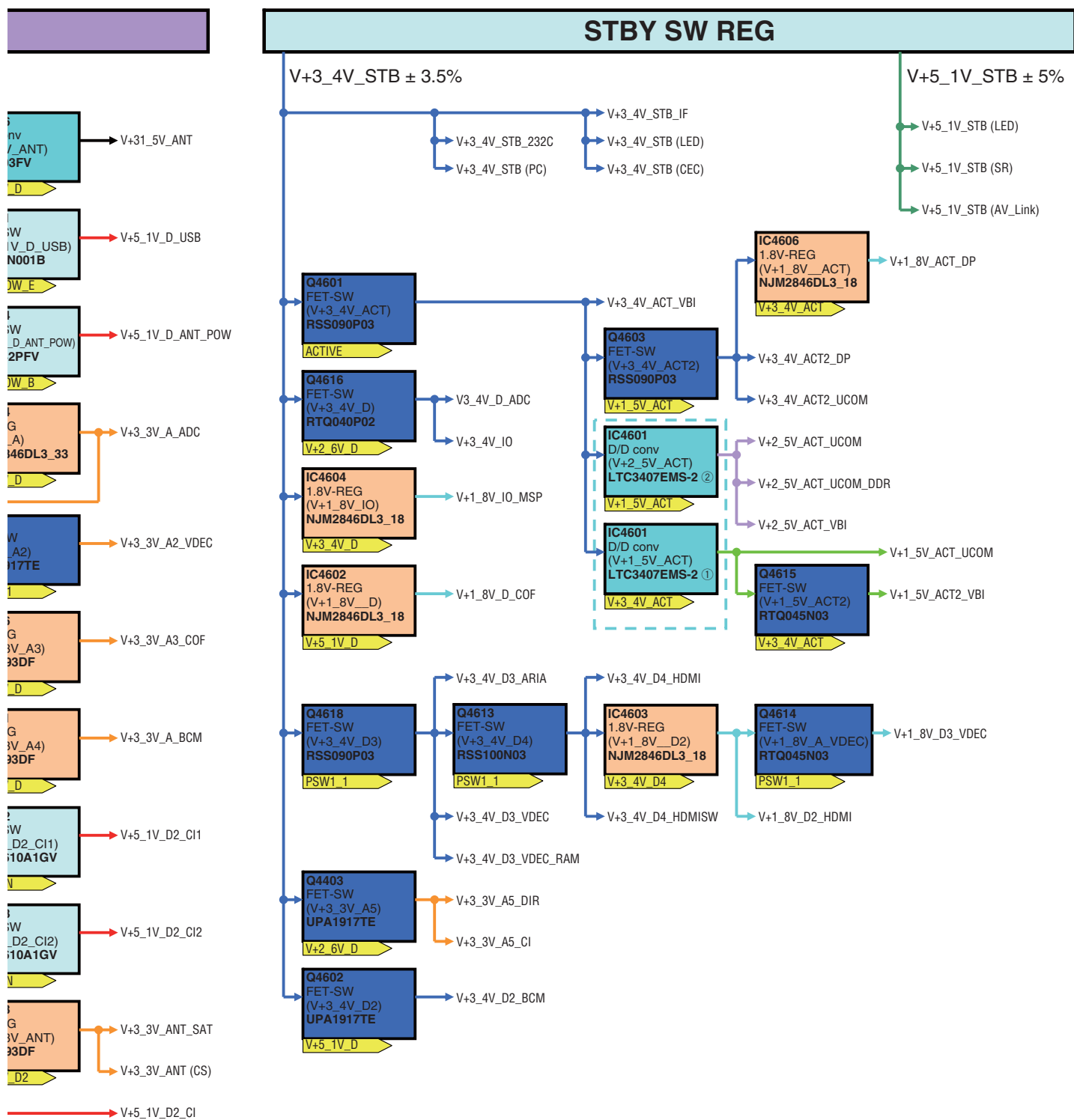
D

E

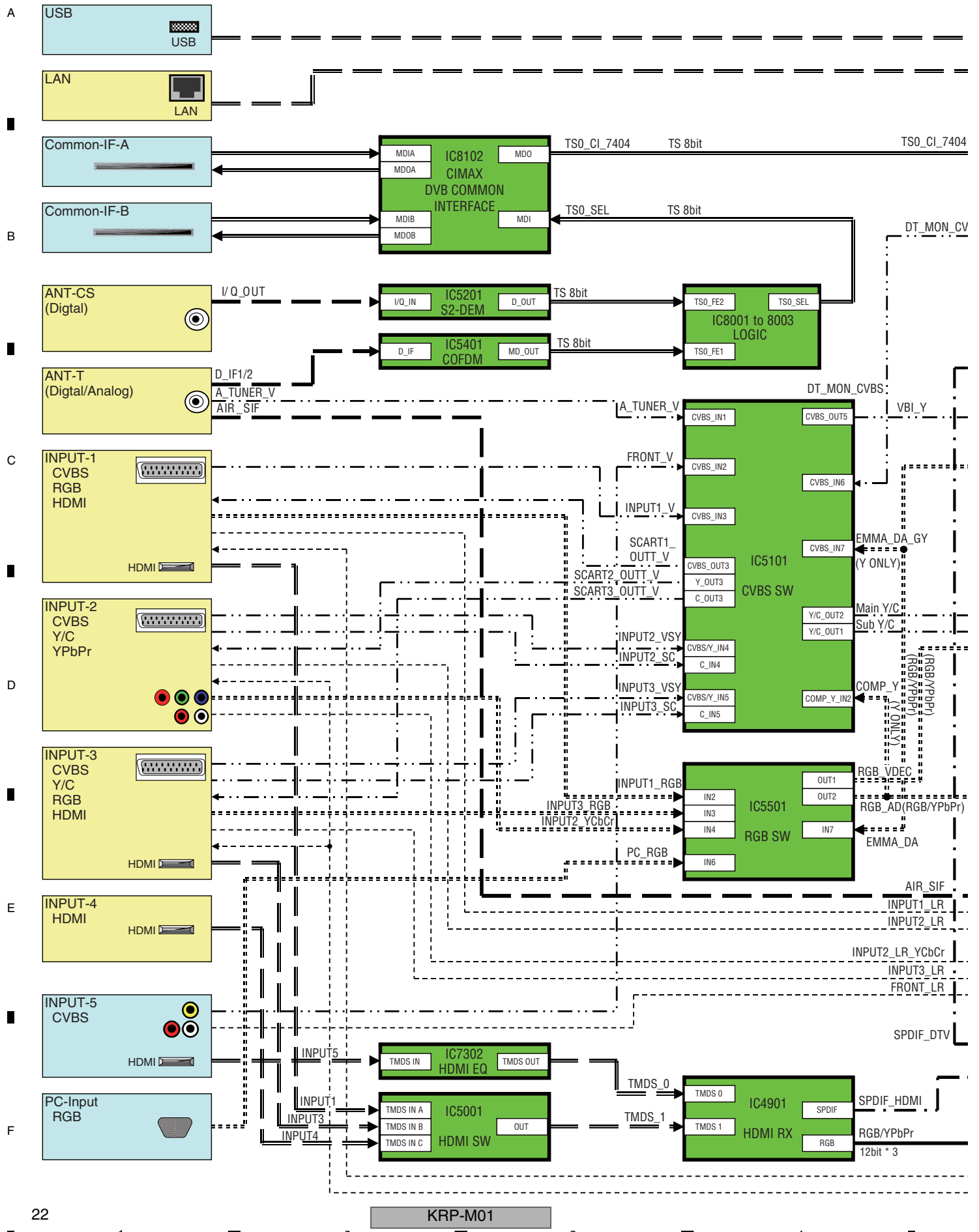
F

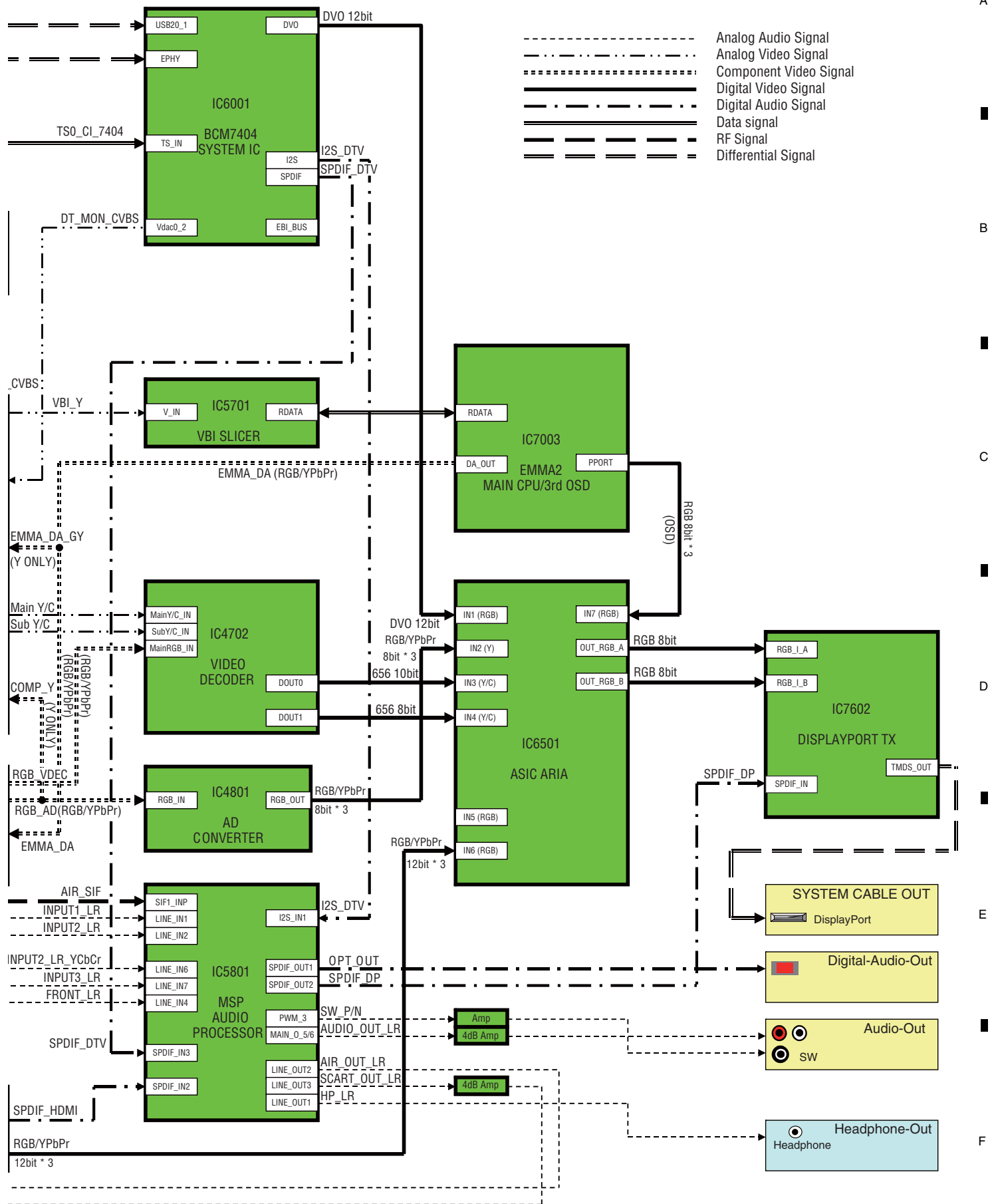
SW REG CONTROLLED BY RELAY





4.5 AV BLOCK





5. DIAGNOSIS

5.1 POWER SUPPLY OPERATION

A

[1] LED DISPLAY INFORMATION

LED Pattern

Status	LED	LED Pattern / Remarks						
Standby Power Management	Blue Red Orange							
Power On	Blue Red Orange							
Power-Down	Blue Red Orange	Once 500ms	Twice	n times	2.5s	Once	*1	
Shutdown	Blue Red Orange	500ms Once	Twice	n times	2.5s	Once	*2	
Shutdown (Subcategory flashing)	Blue Red Orange	500ms Once 500ms	Twice	n times	2.5s	Once	*2 *3	
No digital adjustment data copied for backup	Blue Red Orange	200ms						
Updating the PC	Blue Red Orange	100ms 100ms						
During factory operation	Blue Red Orange							
During DTB communication inhibit	Blue Red Orange	100ms						
During USB update	Blue Red Orange	100ms 100ms						
Updating of USB is finished normally.	Blue Red Orange	100ms 100ms						
Updating of USB is abnormally finished.	Blue Red Orange	100ms 100ms 500ms	Once	500ms Twice	500ms n times	2.5s	500ms	*4
Power ON of standalone mode (Screen ON)	Blue Red Orange	1000msec 1000msec 1000msec 1000msec						
Mode switch of system / standalone operation	Blue Red Orange	200ms						
Sleep timer	Blue Red Orange							
During reservation video recording (Unit: Standby)	Blue Red Orange							
During reservation video recording (Unit: ON)	Blue Red Orange							



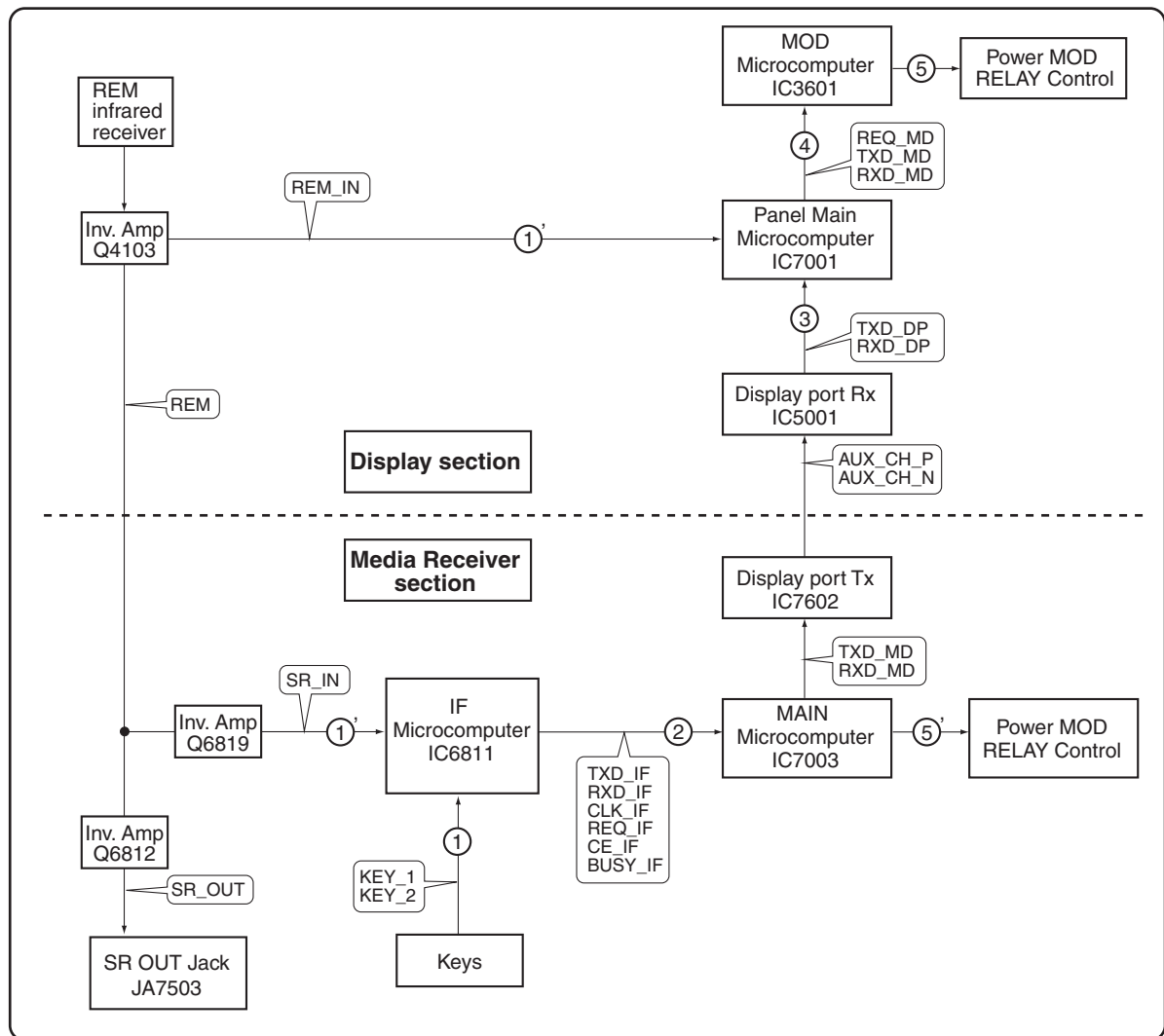
*1: Notify upon the power-down content by Red LED flashing number of times.

*2: Notify upon the shutdown content by Blue LED flashing number of times

*3: Notify upon the subcategory number by Orange LED flashing number of times.

*4: Notify upon the abnormal state by Orange LED flashing number of times.

[2] POWER ON SEQUENCE



- ① : The KEY signal is input to the IF microcomputer.
- ①' : The remote control signal is input to the IF microcomputer and Panel main microcomputer.
- ② : The IF microcomputer sends the operation data of the remote control unit key to the main microcomputer.
- ③ : The main microcomputer issues a startup command (PON) to the panel main microcomputer through DP Tx and DP Rx.
- ④ : The panel main microcomputer issues a startup command (PON) to the MOD microcomputer.
- ⑤ : The MOD microcomputer controls a MOD relay of the POWER SUPPLY Unit (Display section), then the power is turned on.
- ⑤' : The main microcomputer controls a MOD relay of the POWER SUPPLY Unit (Media Receiver section), then the power is turned on.

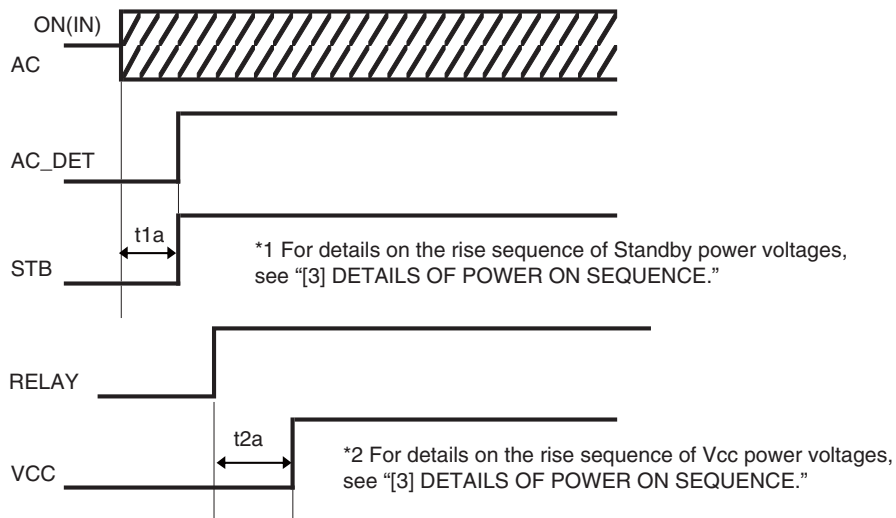
A

■ OUTLINE OF POWER ON SEQUENCE

The rise of the output voltage is defined as the point at which 10% output voltage is reached, and the fall is defined as the output supply stop point.

■ Sequence of AC ON (IN)

B



C

(a) Relay signal: When the POWER key on the remote control unit is pressed after that on the unit is set to ON

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
RELAY to VCC	$t2a \leq 0.5s$

D

(b) Relay signal: When the POWER key on the remote control unit is pressed while the unit is OFF (in Standby mode)

AC ON	
Item	Specified Time
AC to STB	$t1a \leq 0.8s$
Relay to VCC	t2a No specification

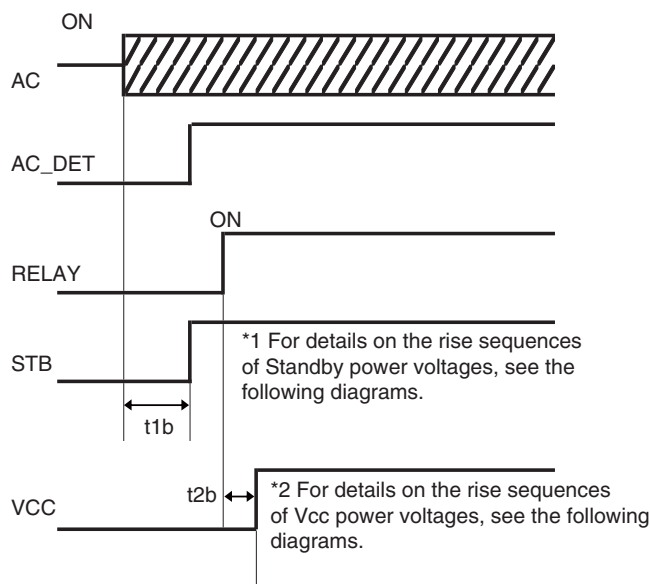
E

F

[3] DETAILS OF POWER ON SEQUENCE

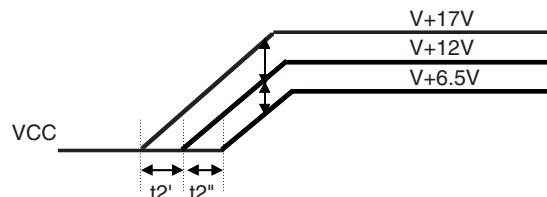
The rise of the output voltage is defined as the point at which 10% output voltage is reached.

1. Sequence of Relay ON (IN)



Relay ON	
Item	Specified Time
AC to STB	$t1b \leq 0.8s$
RELAY to VCC	$t2b \leq 0.5s$

3. Rise sequences of Vcc power voltages



<Specified time of voltages>

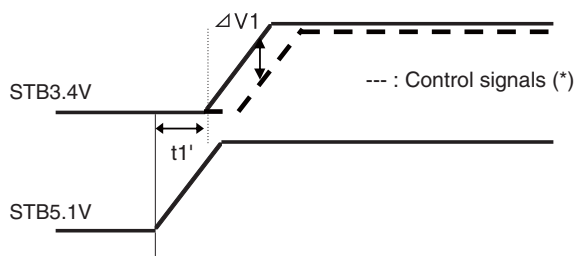
Rise	
Item	Specified time (at nominal load)
V+17V to V+12V	$0ms \leq t2' \leq 10ms$
V+12V to V+6.5V	$0ms \leq t2'' \leq 10ms$

4. Specifications of the rise time of the output voltages (common to all sequences)

Note that there must not be any temporary voltage drop during rising.

Rise time (time required for reaching from 10% to 90% output voltage)	
Item	Specified time
STB 10% to STB 90%	$tr_STB \leq 100ms$
VCC 10% to VCC 90%	$tr_VCC \leq 200ms$

2. Rise sequence of Standby power voltages



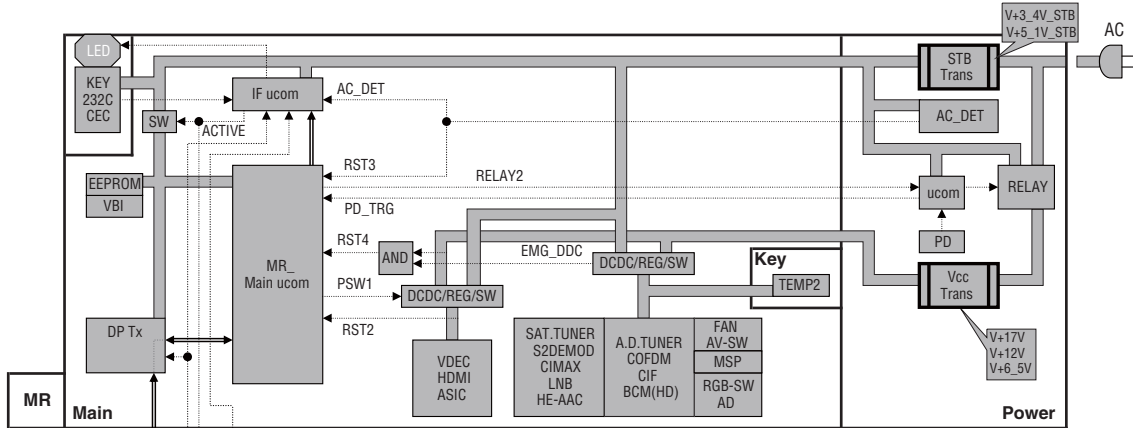
<Specified time and difference of voltages>

Rise	
Item	Specified Time
STB5.1V to STB3.4V	$-50ms \leq t1' \leq 50ms$
Item	Specified difference of voltages
STB3.4V - Control signal (*)	$0V \leq \Delta V1$

(*) Control signals (output signals) denote AC_DET and PD_TRG signals.

A DETAILS OF POWER ON SEQUENCE

AC-OFF



(MR) Output port setting

IF: ACTIVE	OFF
MR Main: RELAY2	OFF
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	OFF
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

(MR) Operation outline

All devices are not electrified.

(Panel) Output port setting

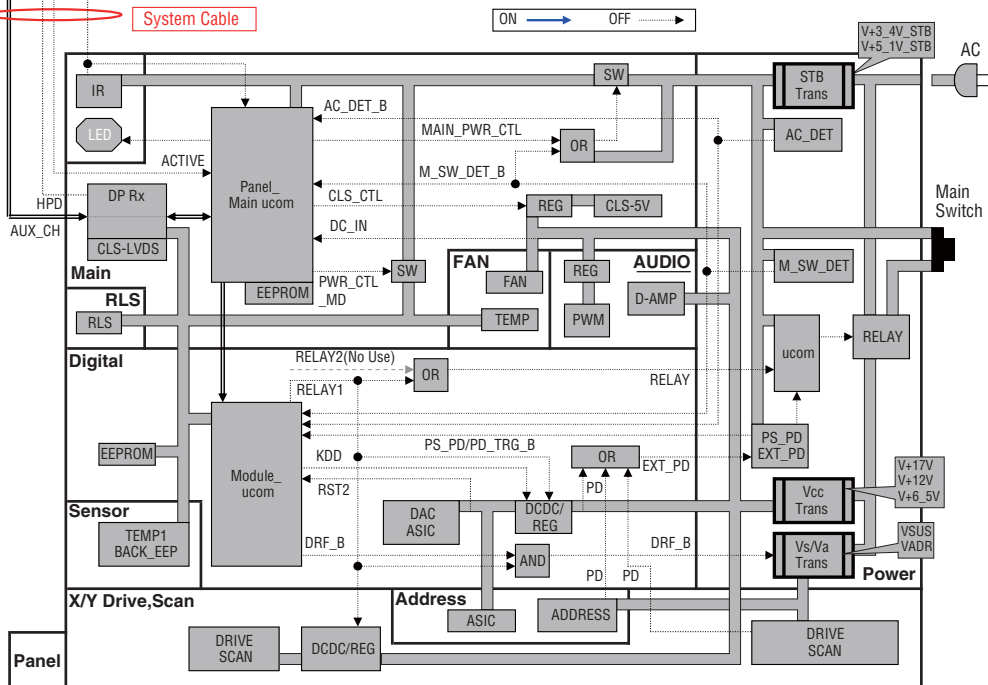
Panel Main: MAIN_PWR_CTL	OFF
Panel Main: PWR_CTL_MD	OFF
Panel Main: CLS_CTL	OFF
DP Rx: HPD	OFF
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

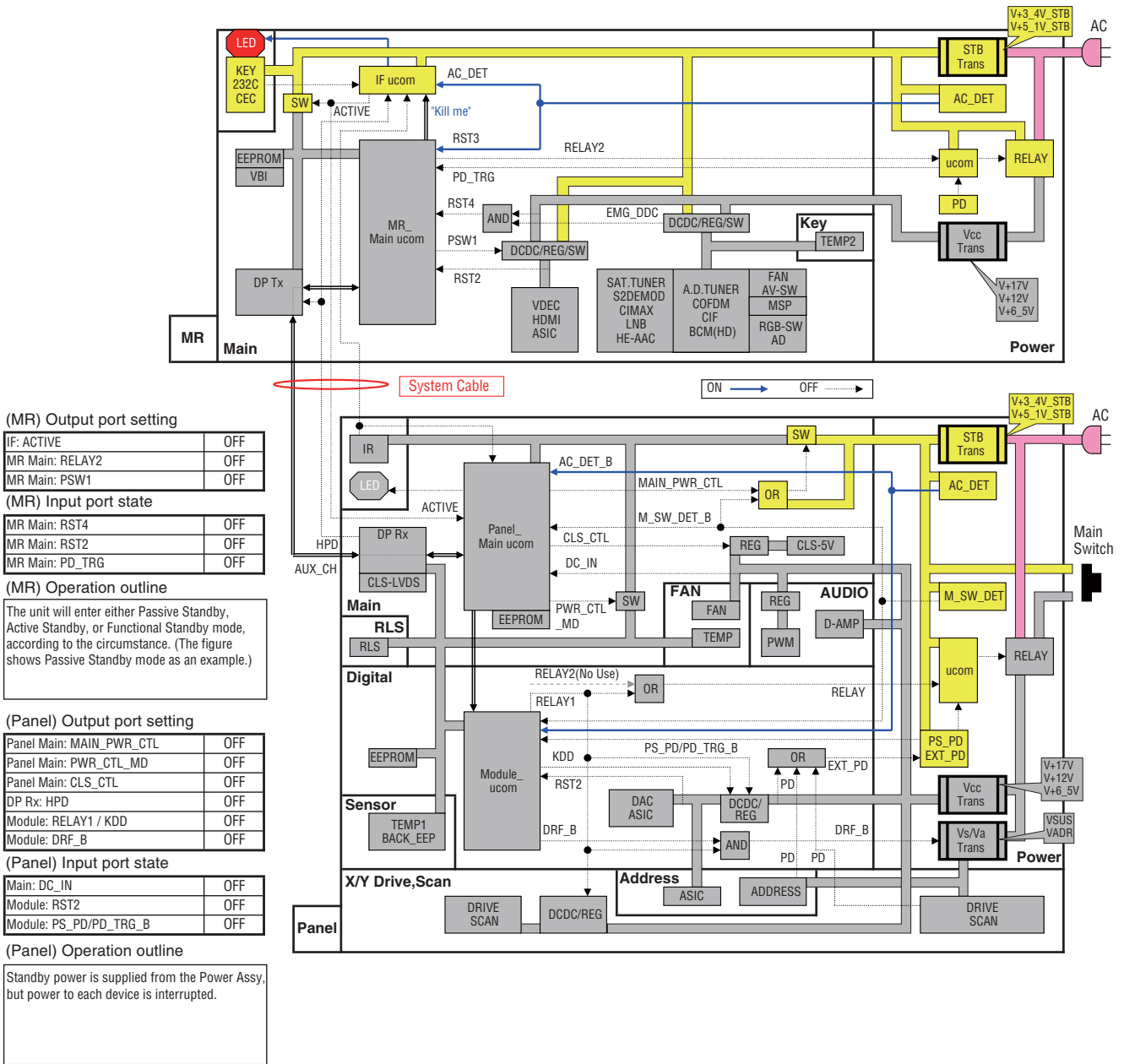
Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

(Panel) Operation outline

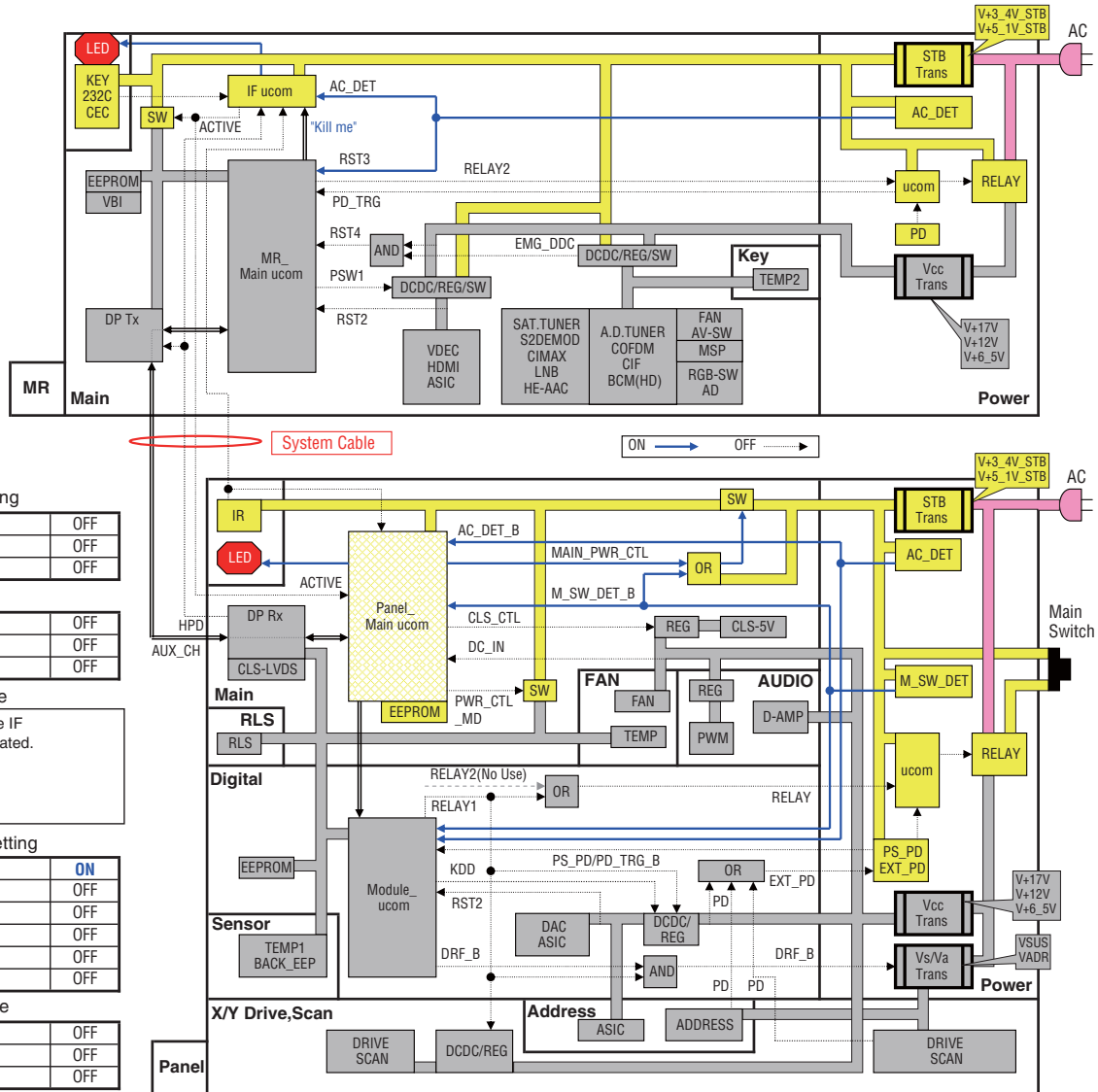
All devices are not electrified.



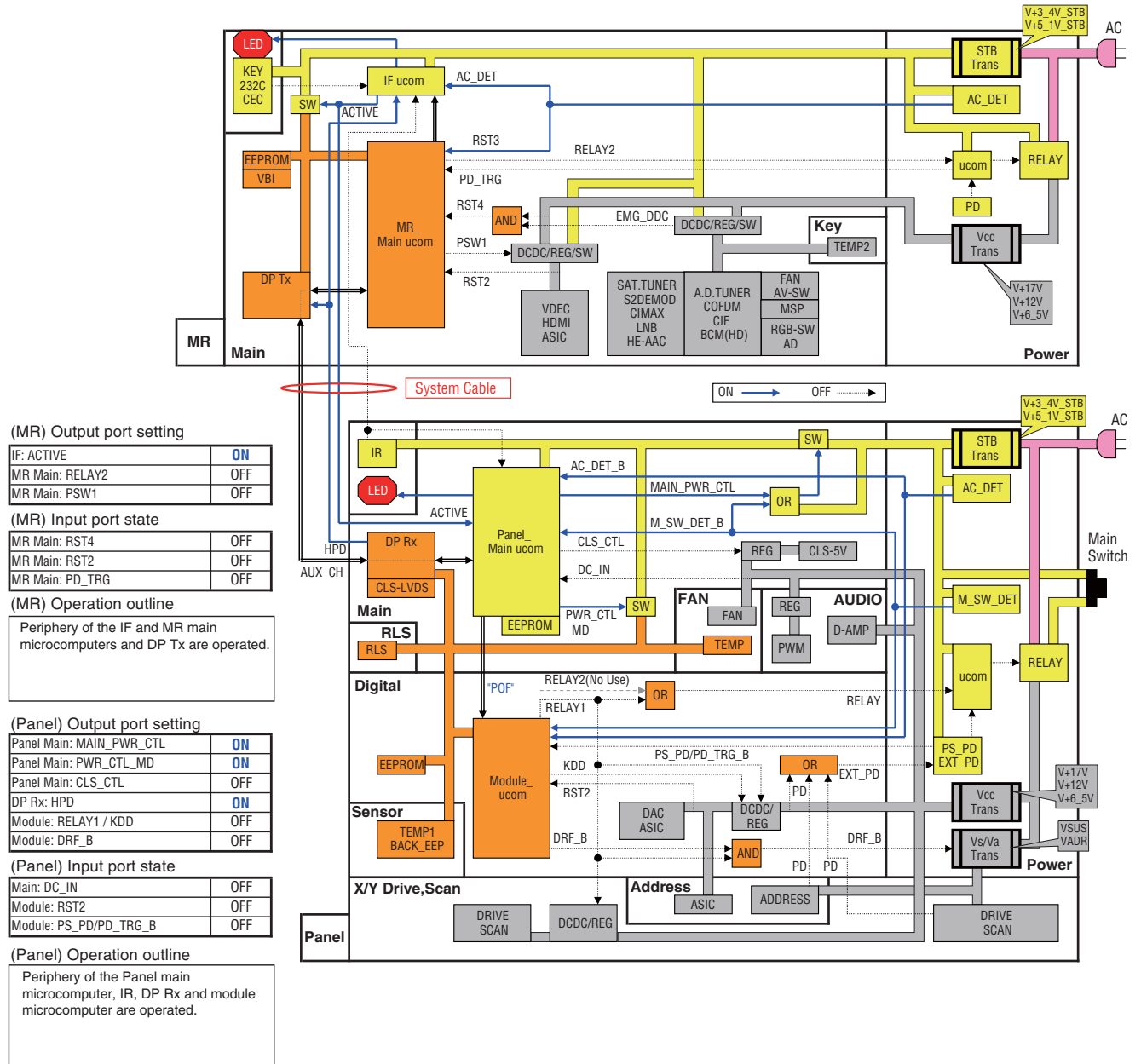
Panel Main Power OFF



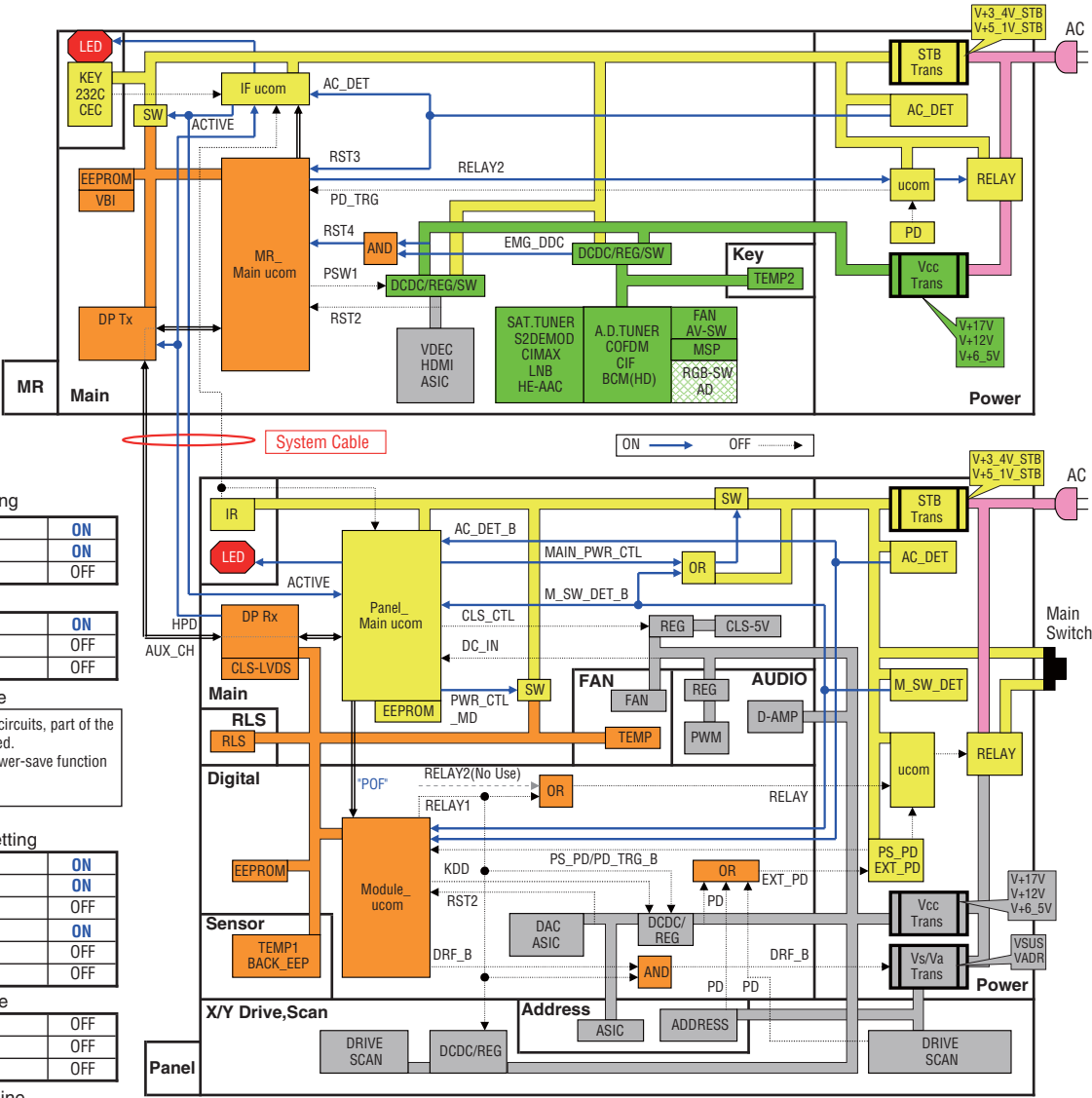
Passive Standby



Active Standby



Function Standby



(MR) Output port setting

IF: ACTIVE	ON
MR Main: RELAY2	ON
MR Main: PSW1	OFF

(MR) Input port state

MR Main: RST4	ON
MR Main: RST2	OFF
MR Main: PD_TRG	OFF

- (MR) Operation outline
- Besides the standby power circuits, part of the Vcc circuits are also activated.
 - RGB-SW/AD IC uses the power-save function of the IC.

(Panel) Output port setting

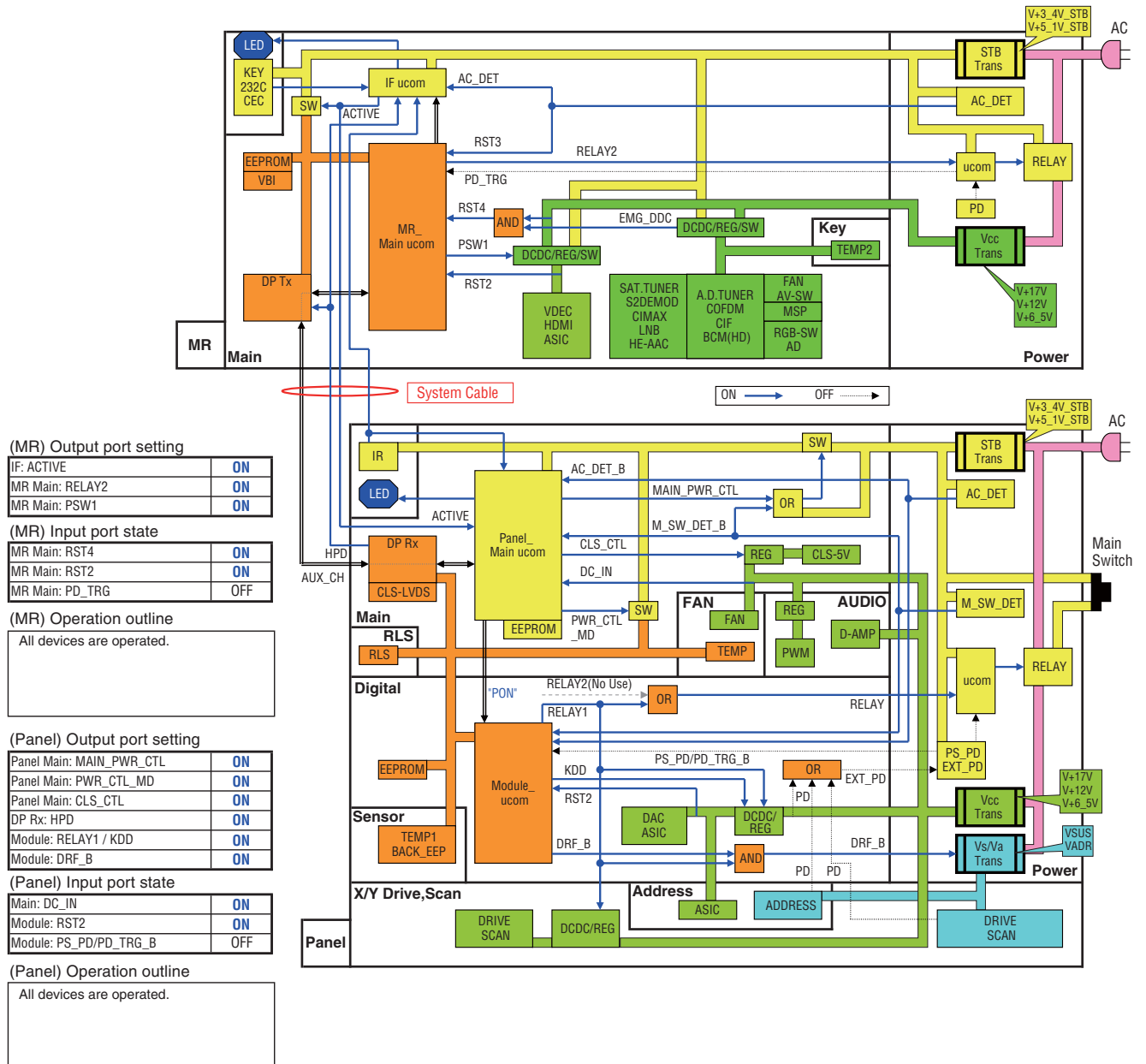
Panel Main: MAIN_PWR_CTL	ON
Panel Main: PWR_CTL_MD	ON
Panel Main: CLS_CTL	OFF
DP Rx: HPD	ON
Module: RELAY1 / KDD	OFF
Module: DRF_B	OFF

(Panel) Input port state

Main: DC_IN	OFF
Module: RST2	OFF
Module: PS_PD/PD_TRG_B	OFF

- (Panel) Operation outline
- Periphery of the Panel main microcomputer, IR, DP Rx and module microcomputer are operated.
(As same state as the active standby)

PDP Screen ON

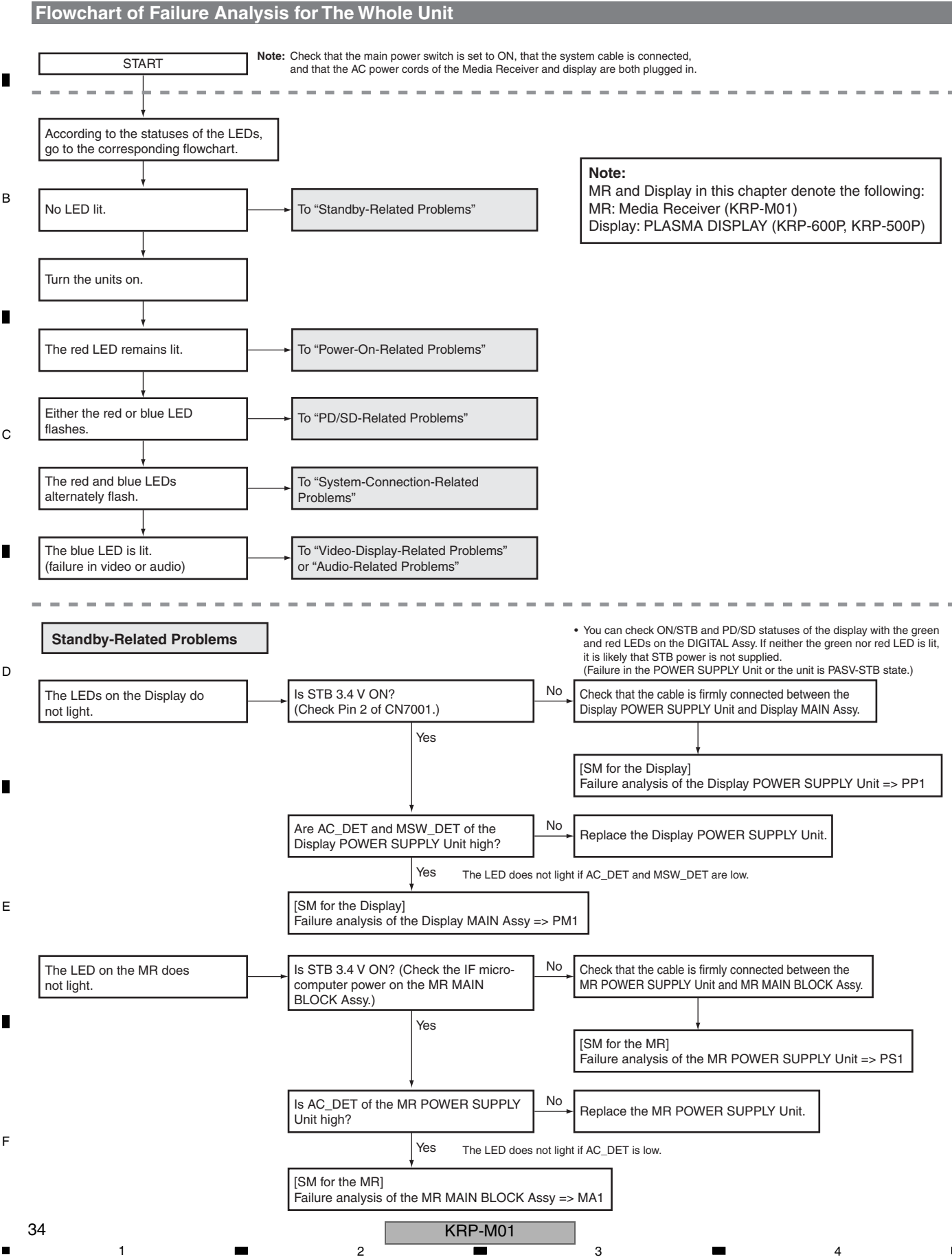


1234

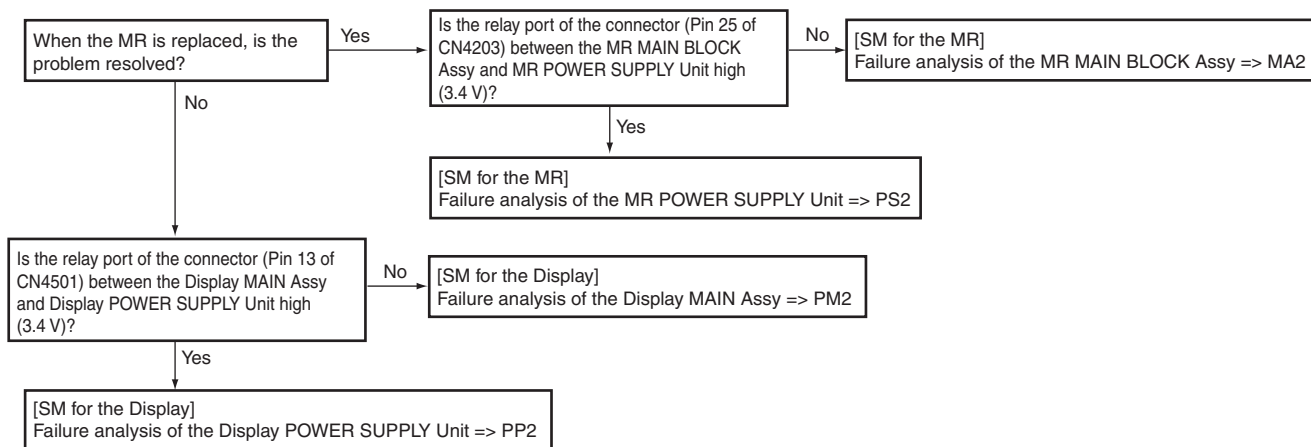
5.2 DIAGNOSIS FLOWCHART OF FAILURE ANALYSIS

A

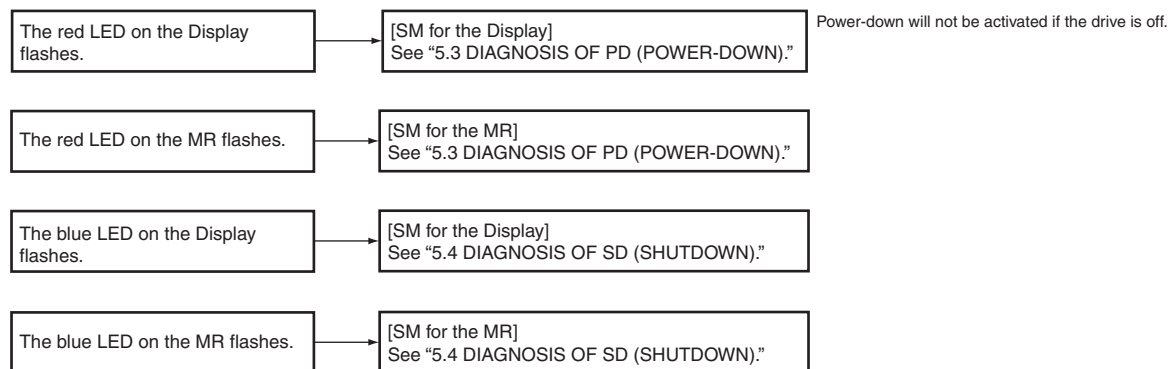
[1] WHOLE UNIT



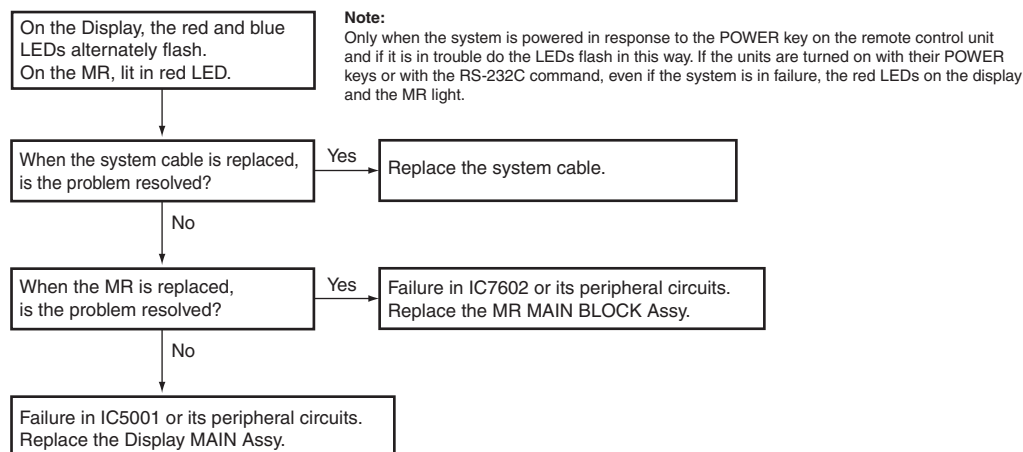
Power-On-Related Problems



PD/SD-Related Problems

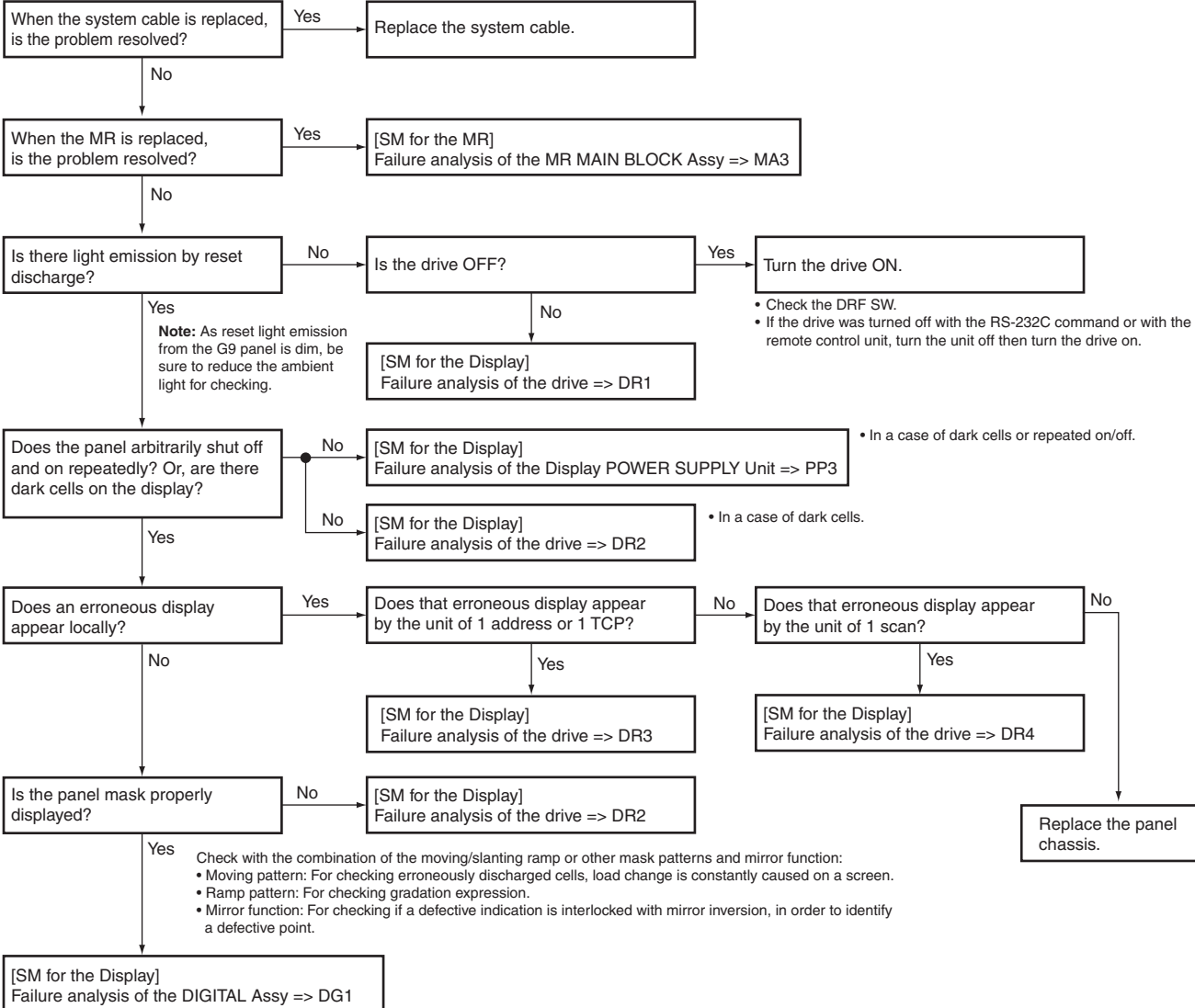


System-Connection-Related Problems



A

Video-Display-Related Problems



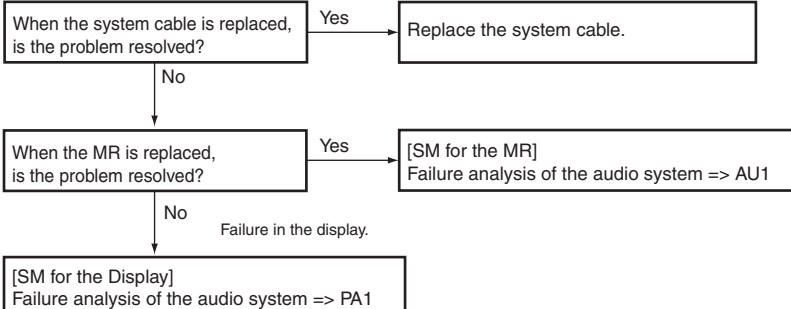
B

C

D

E

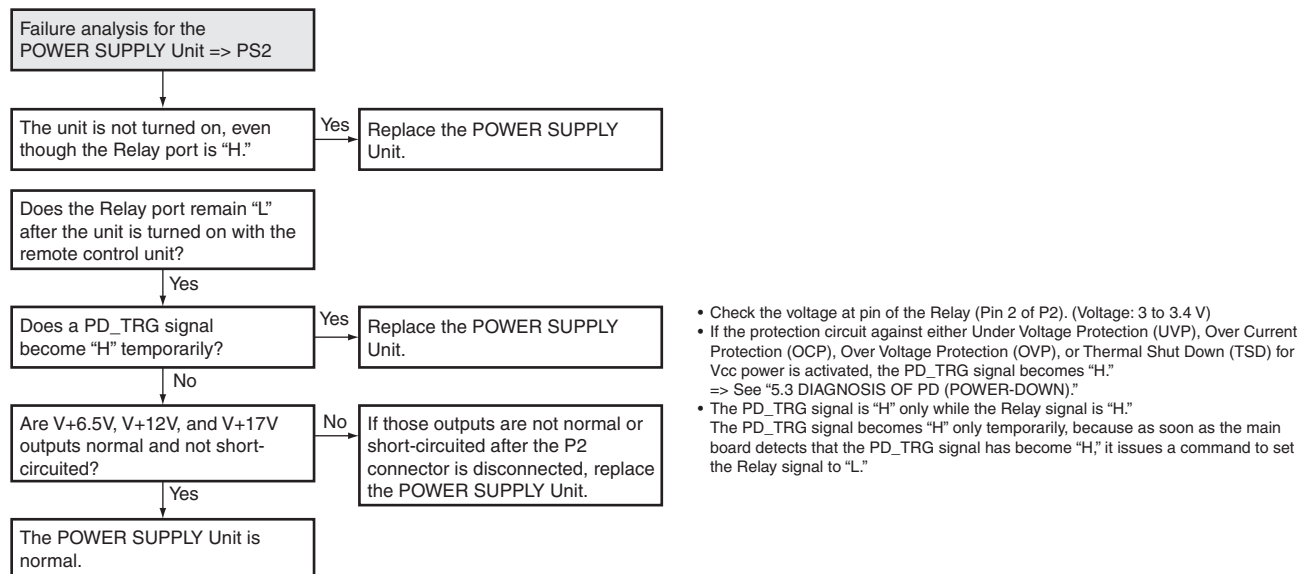
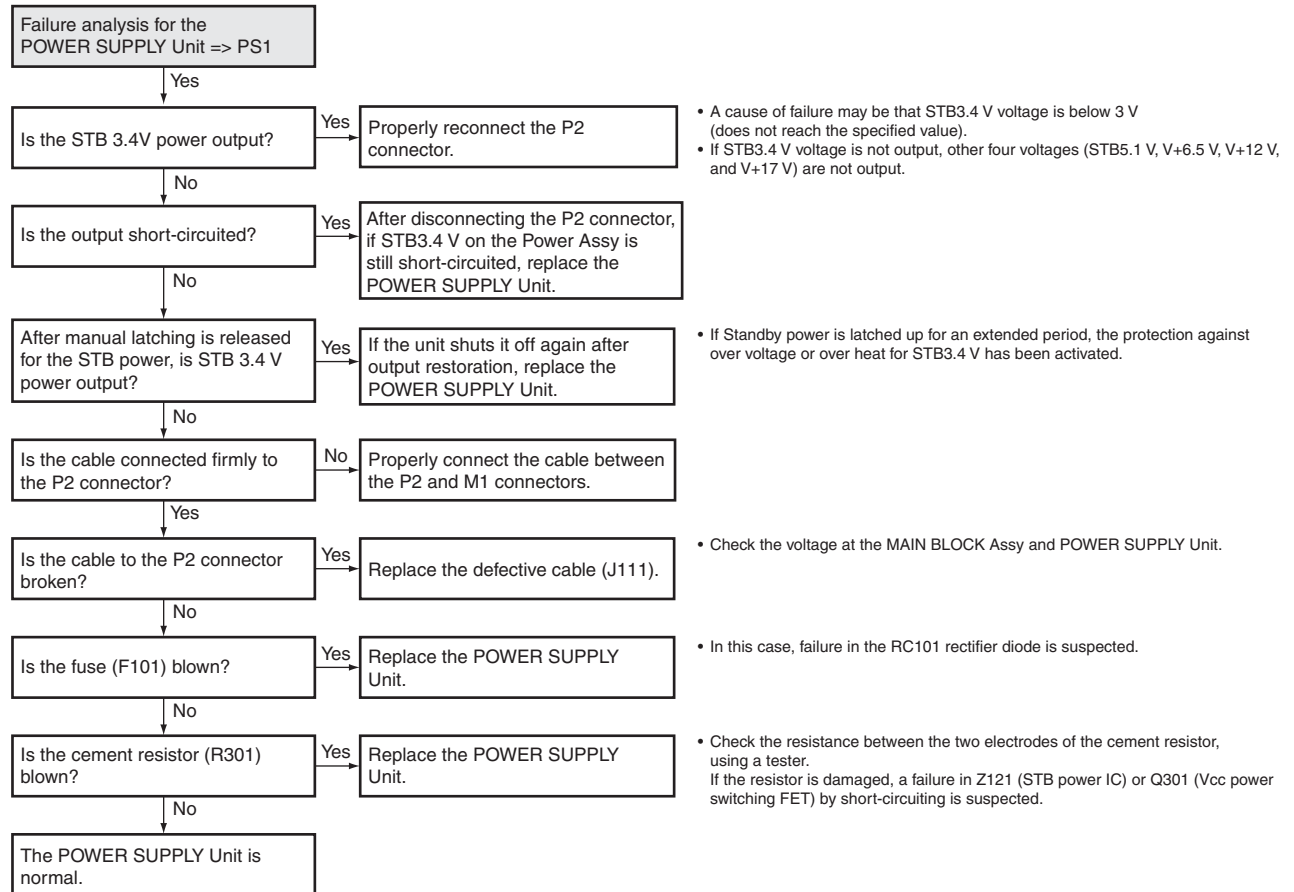
Audio-Related Problems



F

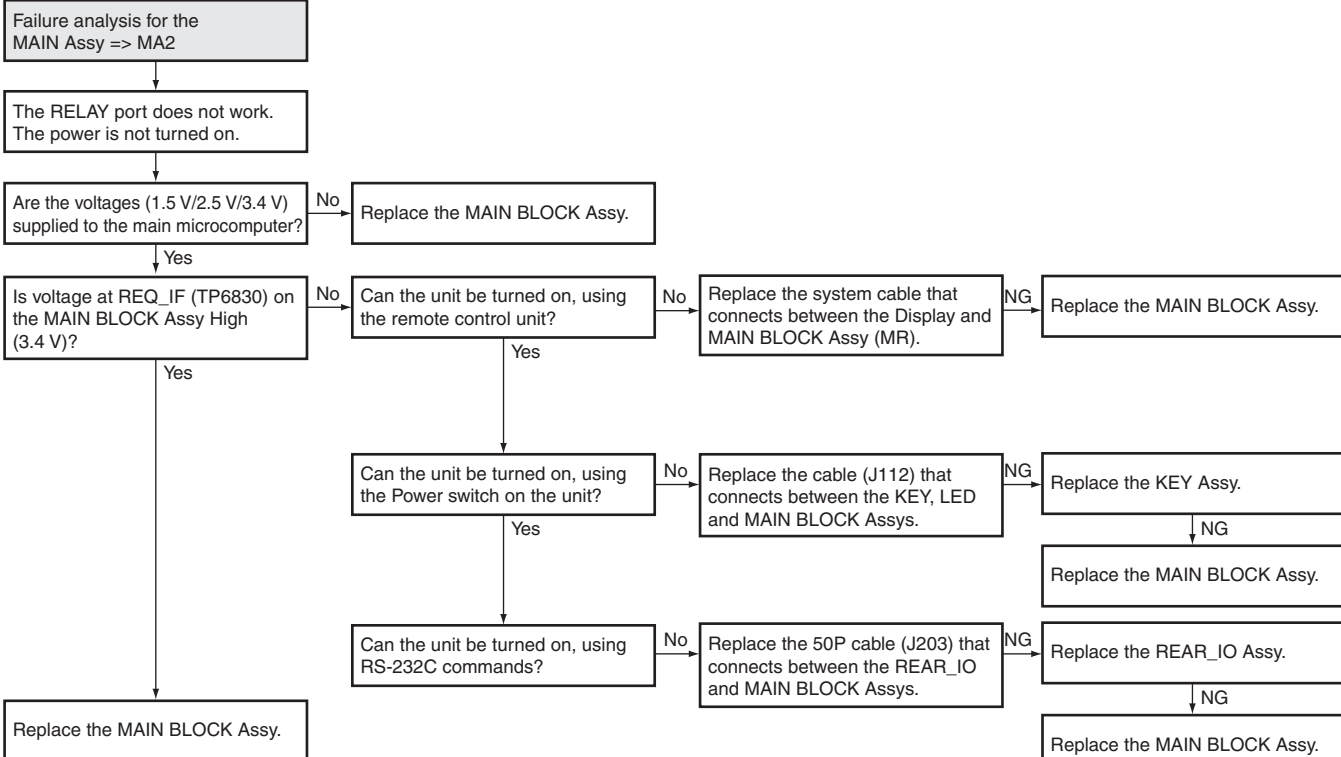
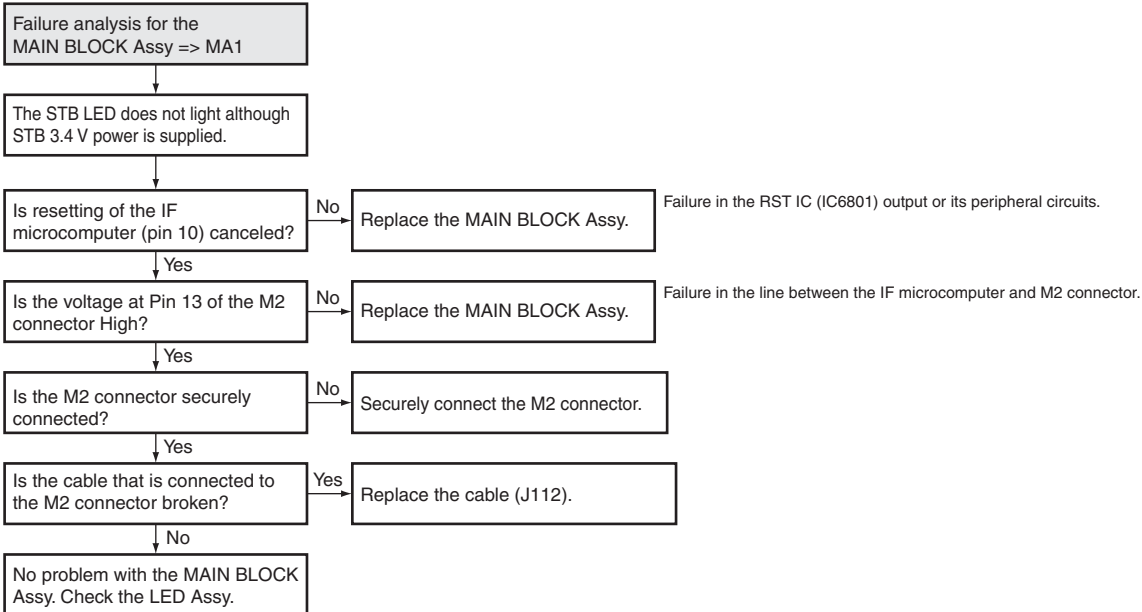
[2] POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit

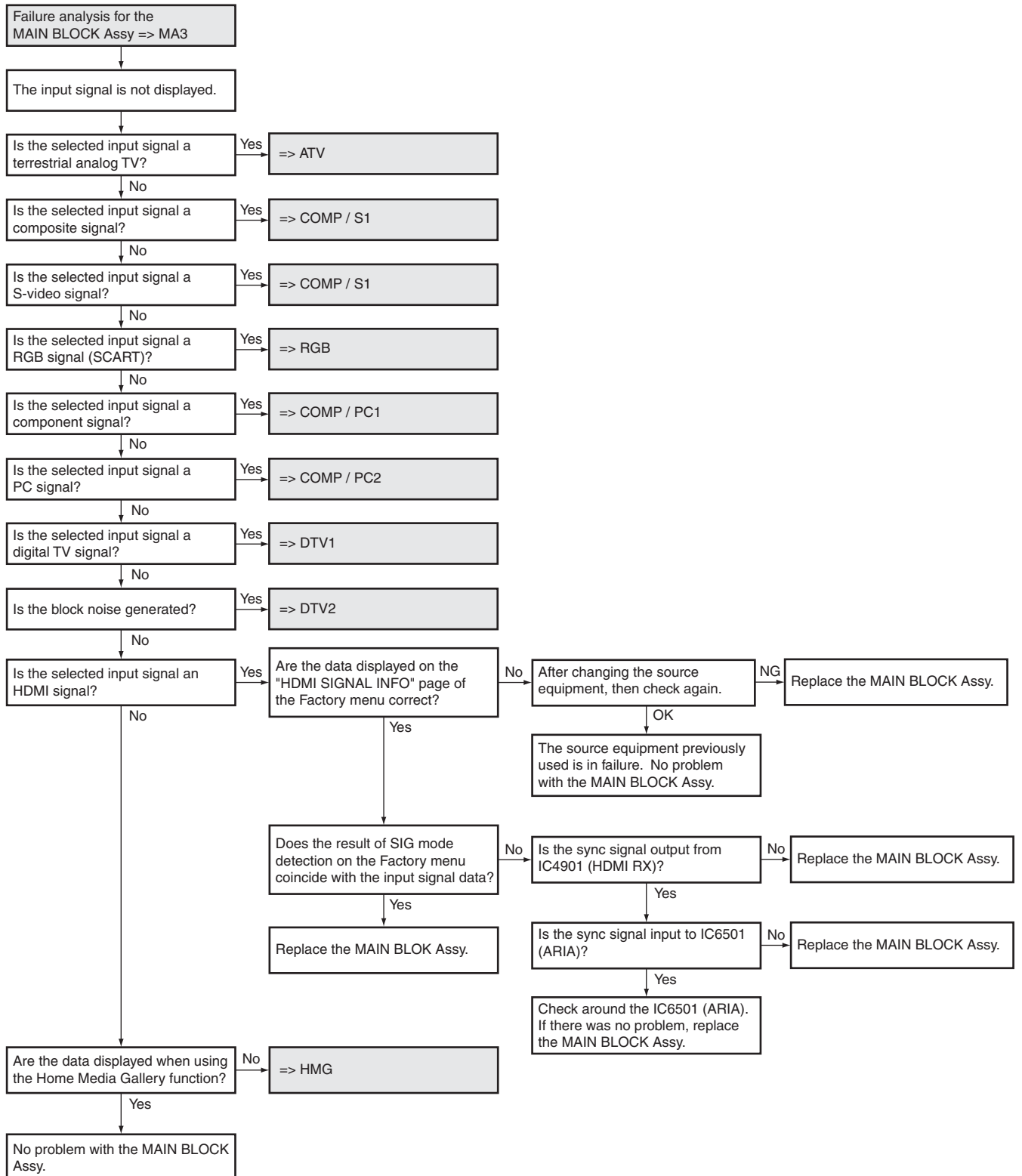


[3] MAIN BLOCK ASSY

Flowchart of Failure Analysis for The MAIN BLOCK Assy

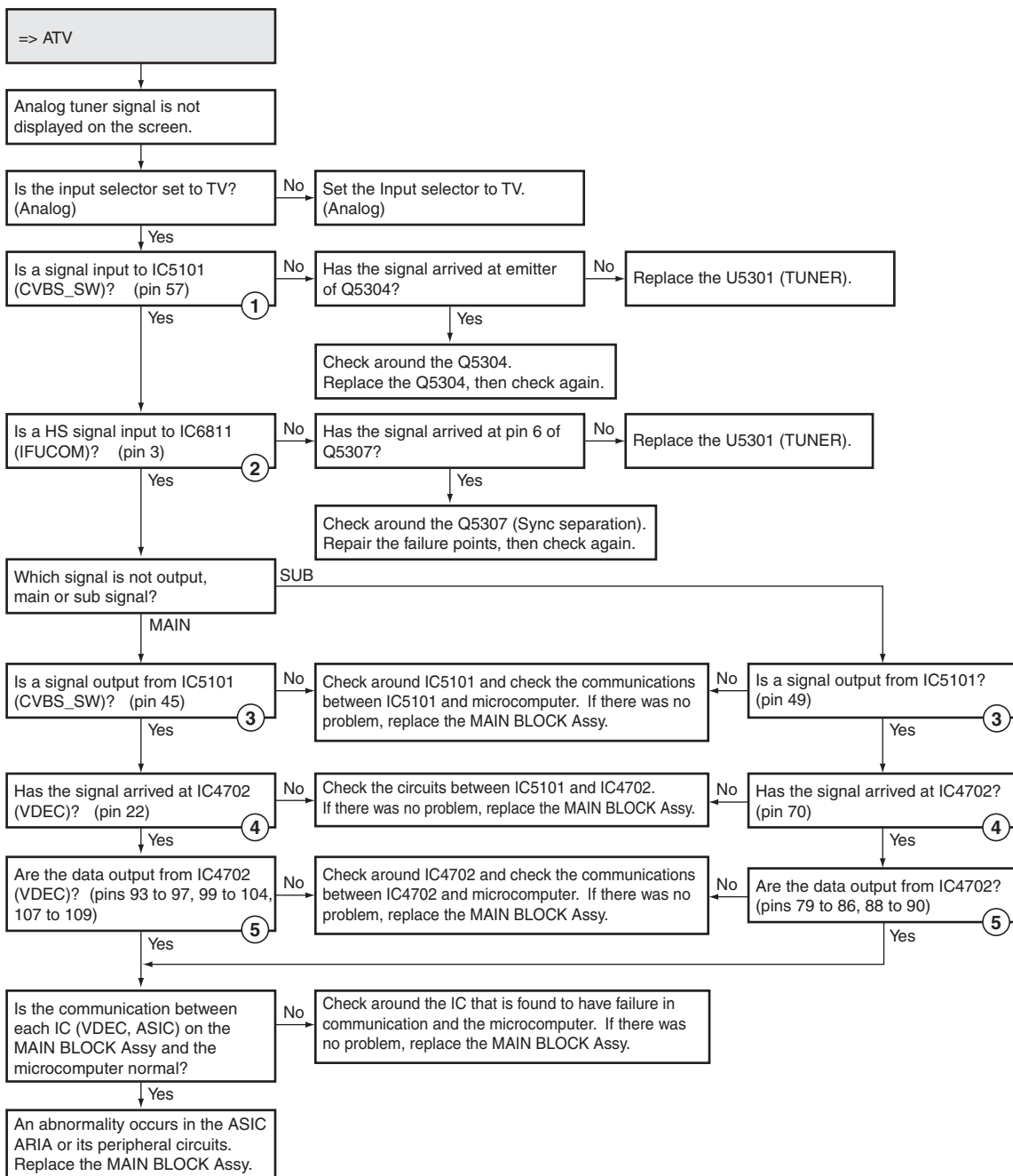


Flowchart of Failure Analysis for The MAIN BLOCK Assy



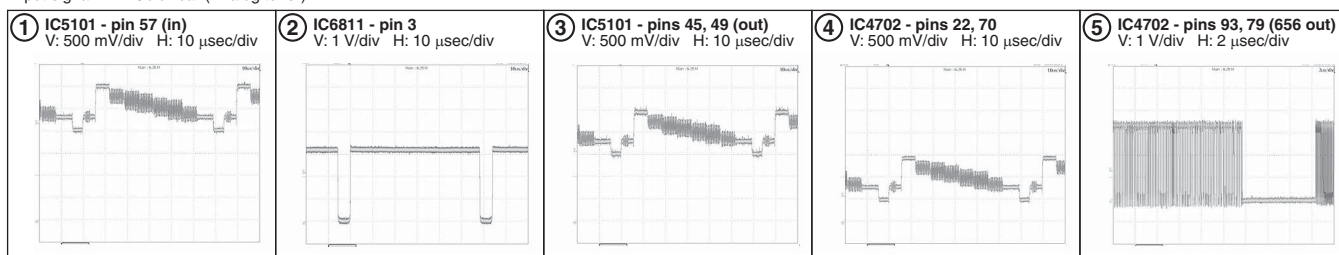
[4] VIDEO SYSTEM

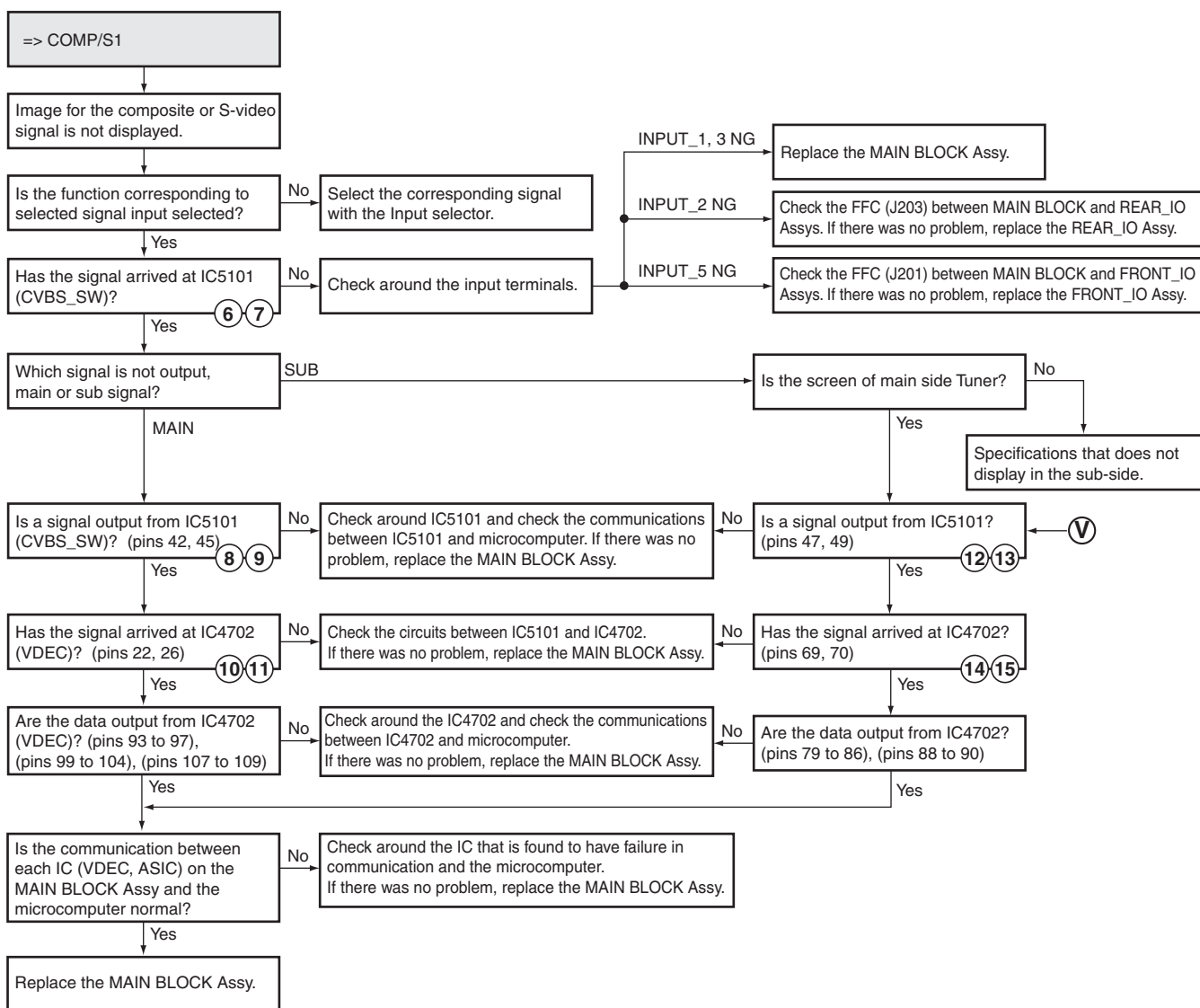
Flowchart of Failure Analysis for The Video System



• Waveforms

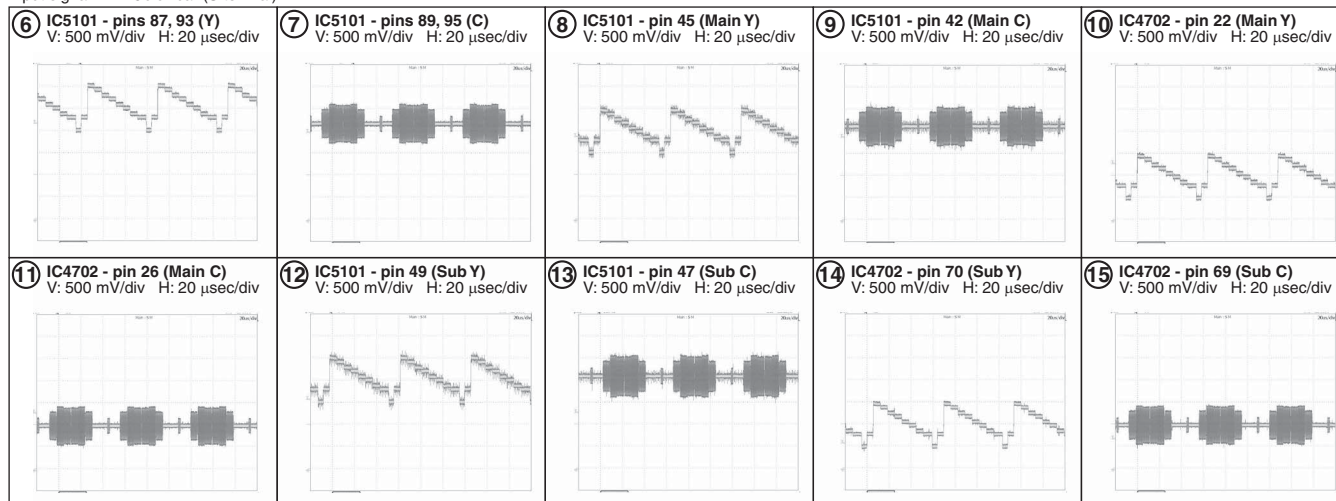
Input signal: PAL Color-bar (Analog tuner)





● Waveforms

Input signal: PAL Color-bar (S terminal)



A

=> RGB

Image for the RGB (SCART) input signal is not displayed.

Is the function corresponding to selected signal input selected?

No

Select the corresponding signal with the Input selector.

Yes

B

Which signal is not output, main or sub signal?

Sub

Is the screen of main side Tuner?

No

Specifications that does not display in the sub-side.

Main

Go to **V**.

Has the signal arrived at IC5501 (RGSW)?

No

Check the circuits between JA7502 and IC5501. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is a signal output from IC5501? (pins 41, 43 and 45)

No

Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

16 17 18

C

Has the signal arrived at IC4702? (pins 27, 28 and 65)

No

Check the circuits between IC5501 and IC4702. If there was no problem, replace the MAIN BLOCK Assy.

Yes

19 20 21

Is the communication between each IC (VDEC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No

Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

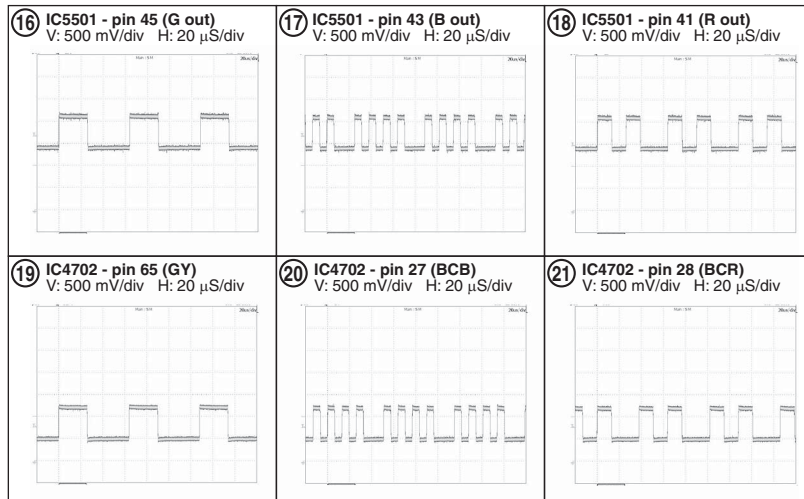
Yes

D

Replace the MAIN BLOCK Assy.

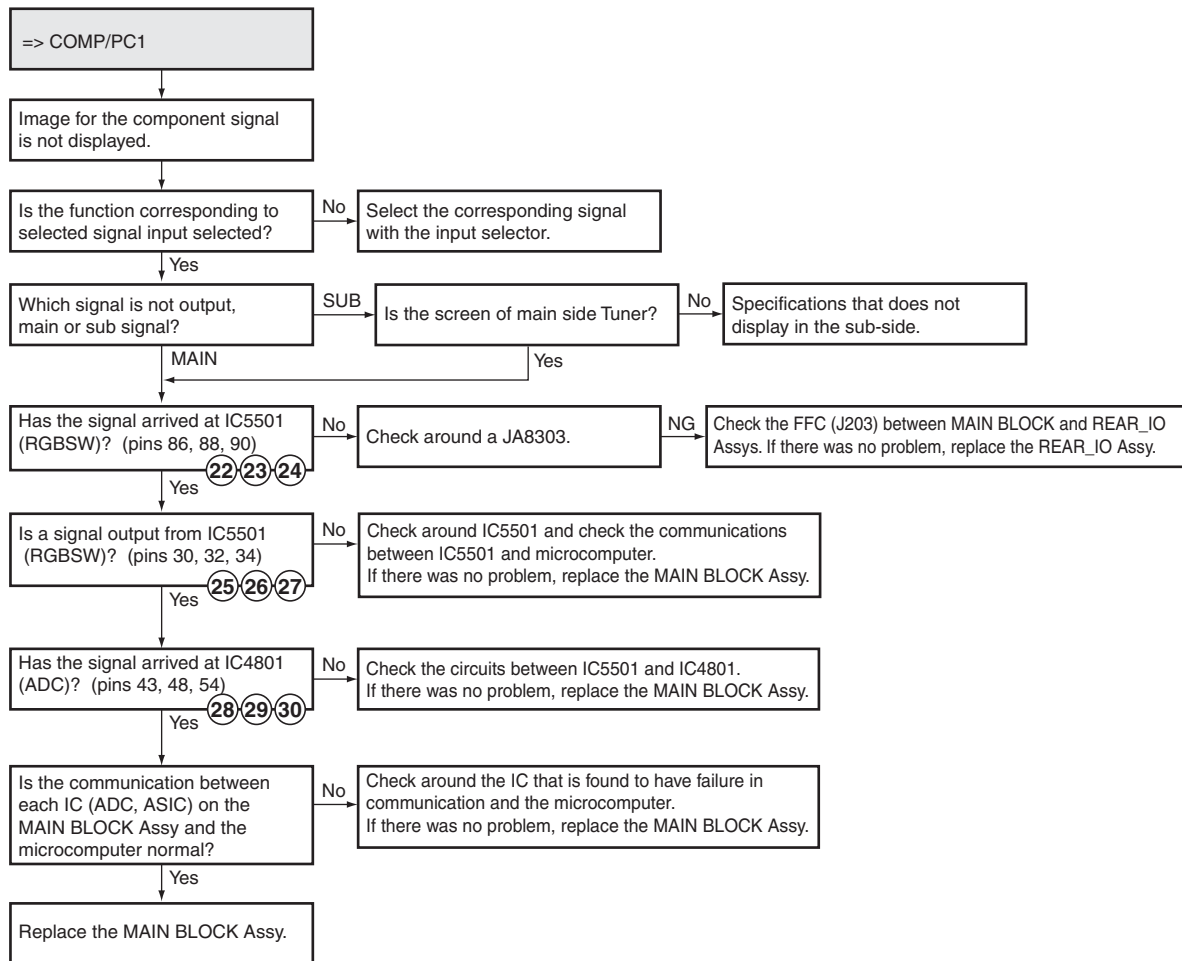
Waveforms

Input signal: PAL Color-bar (SCART RGB terminal)



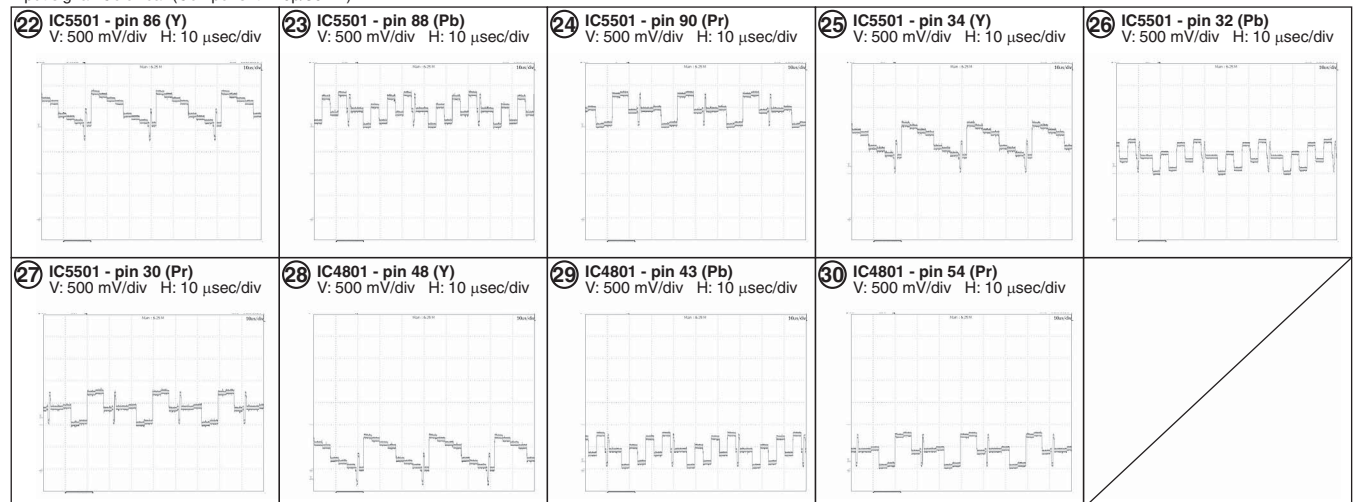
E

F



• Waveforms

Input signal: Color-bar (Component 720p/50 Hz)



A

=> COMP/PC2

Image for the PC signals is not displayed.

Is the function corresponding to selected signal input selected?

No
Select the corresponding signal with the input selector.

Yes

B

Which signal is not output, main or sub signal?

SUB
Is the screen of main side Tuner?

No
Specifications that does not display in the sub-side.

MAIN

Yes

Has the signal arrived at IC5501 (RBSW)? (pins 2, 4, 6, 14, 15)

No
Check around a CN8503.

NG
Check the FFC (J201) between MAIN BLOCK and FRONT_IO Assys. If there was no problem, replace the FRONT_IO Assy.

Yes

Is a signal output from IC5501 (RBSW)? (pins 30, 32, 34)

No
Check around IC5501 and check the communications between IC5501 and microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

Yes

C

Has the signal arrived at IC4801 (ADC)? (pins 43, 48, 54)

No
Check the circuits between IC5501 and IC4801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Is the communication between each IC (ADC, ASIC) on the MAIN BLOCK Assy and the microcomputer normal?

No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no problem, replace the MAIN BLOCK Assy.

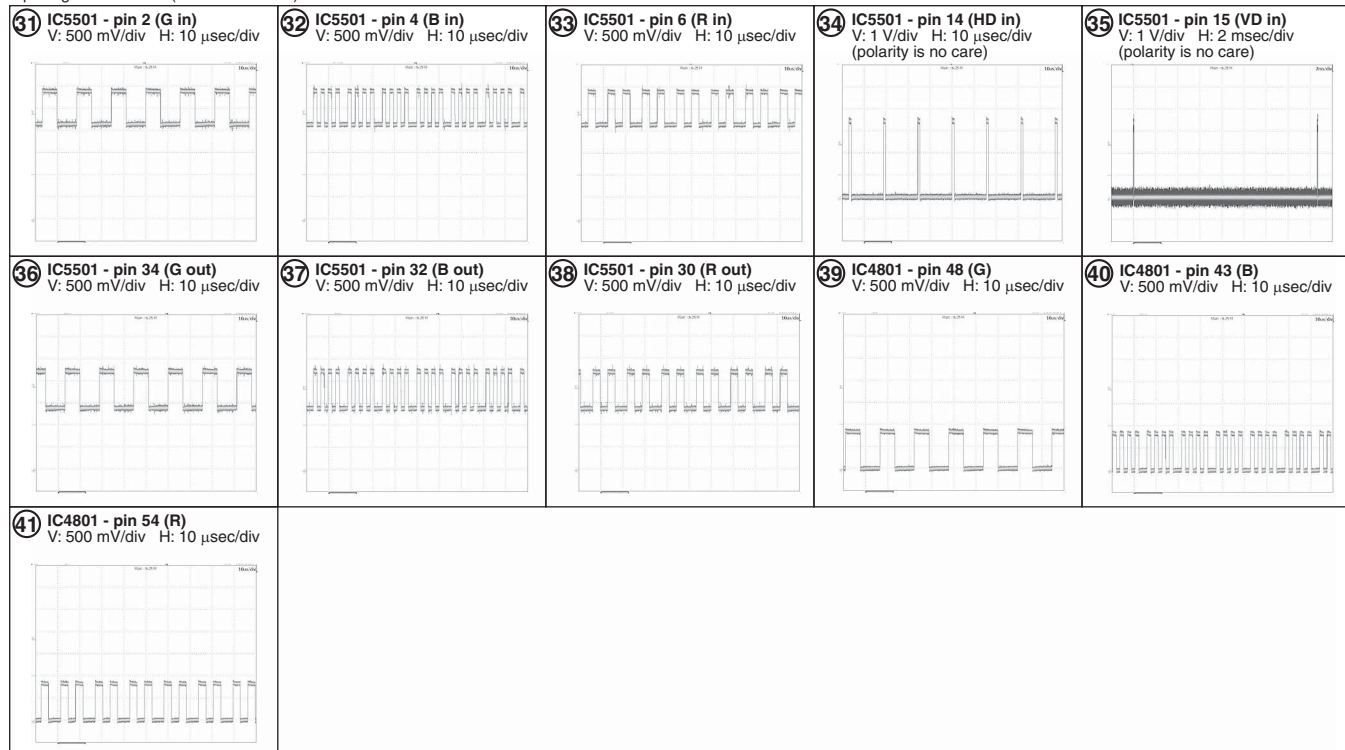
Yes

Replace the MAIN BLOCK Assy.

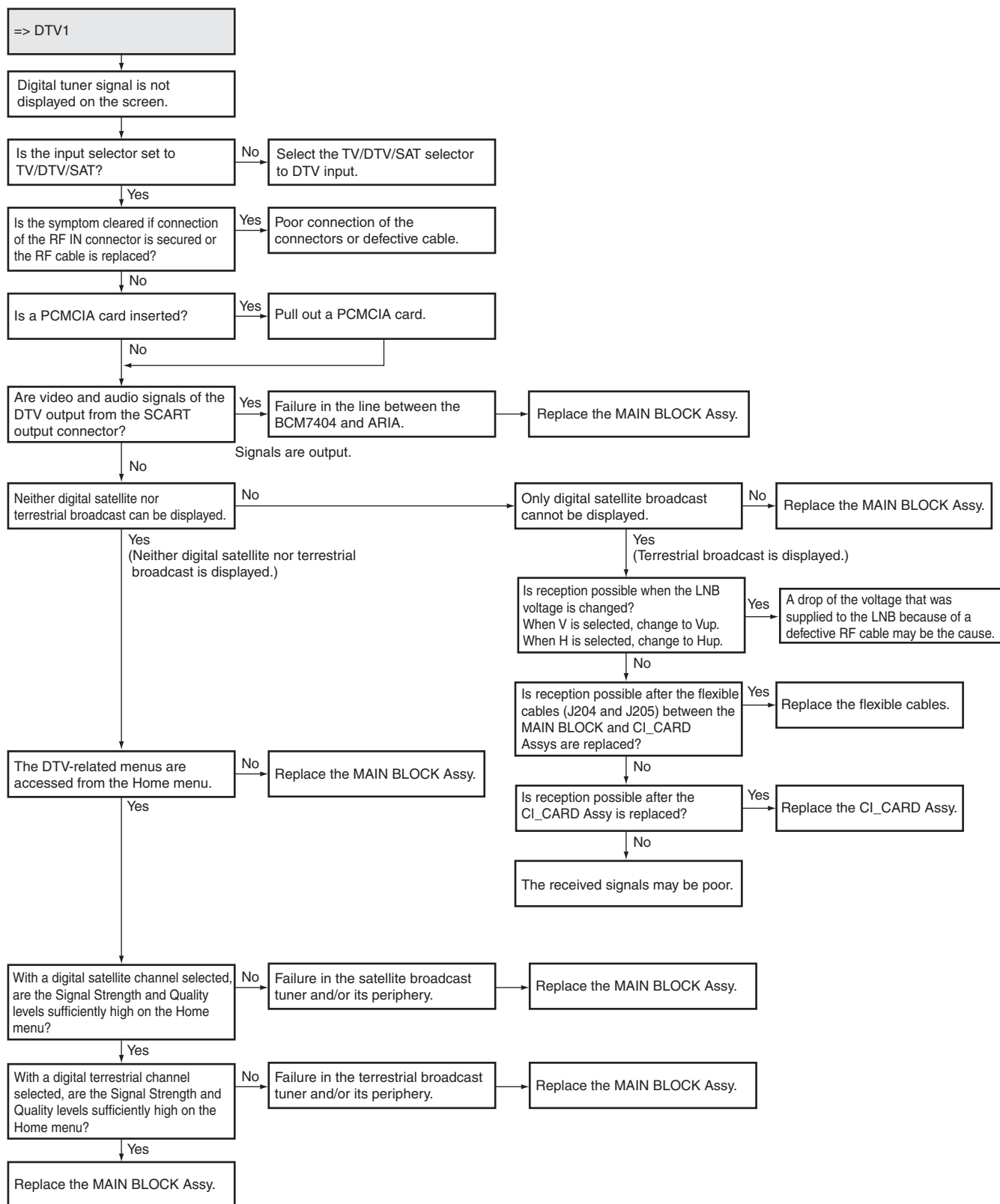
D

● Waveforms

Input signal: Color-bar (PC SXGA/60 Hz)



F



A

[Common to the DTVs 1 and 2] How to Display the DTB Service Menu

As you can display the DTB Service Menu from Factory mode, you should have a remote control unit that supports Factory mode.

Step 1: Press the **FACTORY** key on the remote control unit to display the **INFORMATION** screen in Factory mode.

Step 2: Press the **MUTING** key on the remote control unit 4 times to display the **INITIALIZE** screen.

Step 3: Press the **↓** key on the remote control unit twice so that **DTB SERVICE MODE (+)** is displayed at the bottom of the screen.

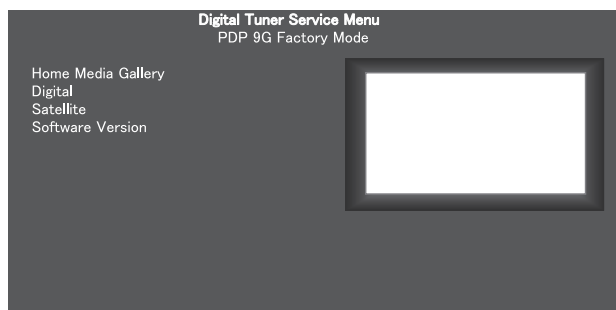
Step 4: Press the **ENTER/SET** key on the remote control so that **MODE SHIFT <=> :No** is displayed at the bottom of the screen.

Step 5: Press the **←** or **→** key on the remote control so that **MODE SHIFT <=> :YES** is displayed at the bottom of the screen.

Step 6: Press the **ENTER/SET** key on the remote control unit for 5 sec or more to display the DTB Service Menu.

B

Top page of the DTB Service Menu



C

Digital : Service menu for digital terrestrial broadcast reception

Satellite : Service menu for digital satellite broadcast reception

■

How to Change the LNB Voltage on the DTV Service Menu

On the Satellite screen of the DTV Service menu below, move the cursor to **LNB POWER** by using the **↓** key on the remote control unit then change the LNB voltage, using the **←** or **→** key.

D

The LNB voltage values are as shown below:

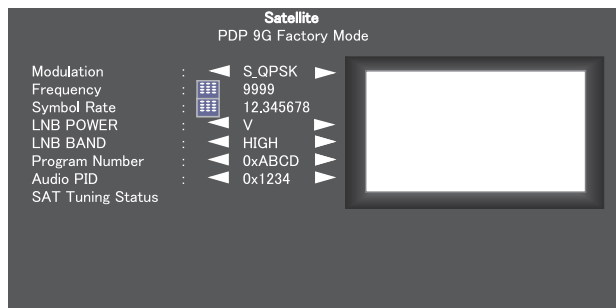
V: 13 V (Typ.)

H: 18 V (Typ.)

Vup: V+1 V

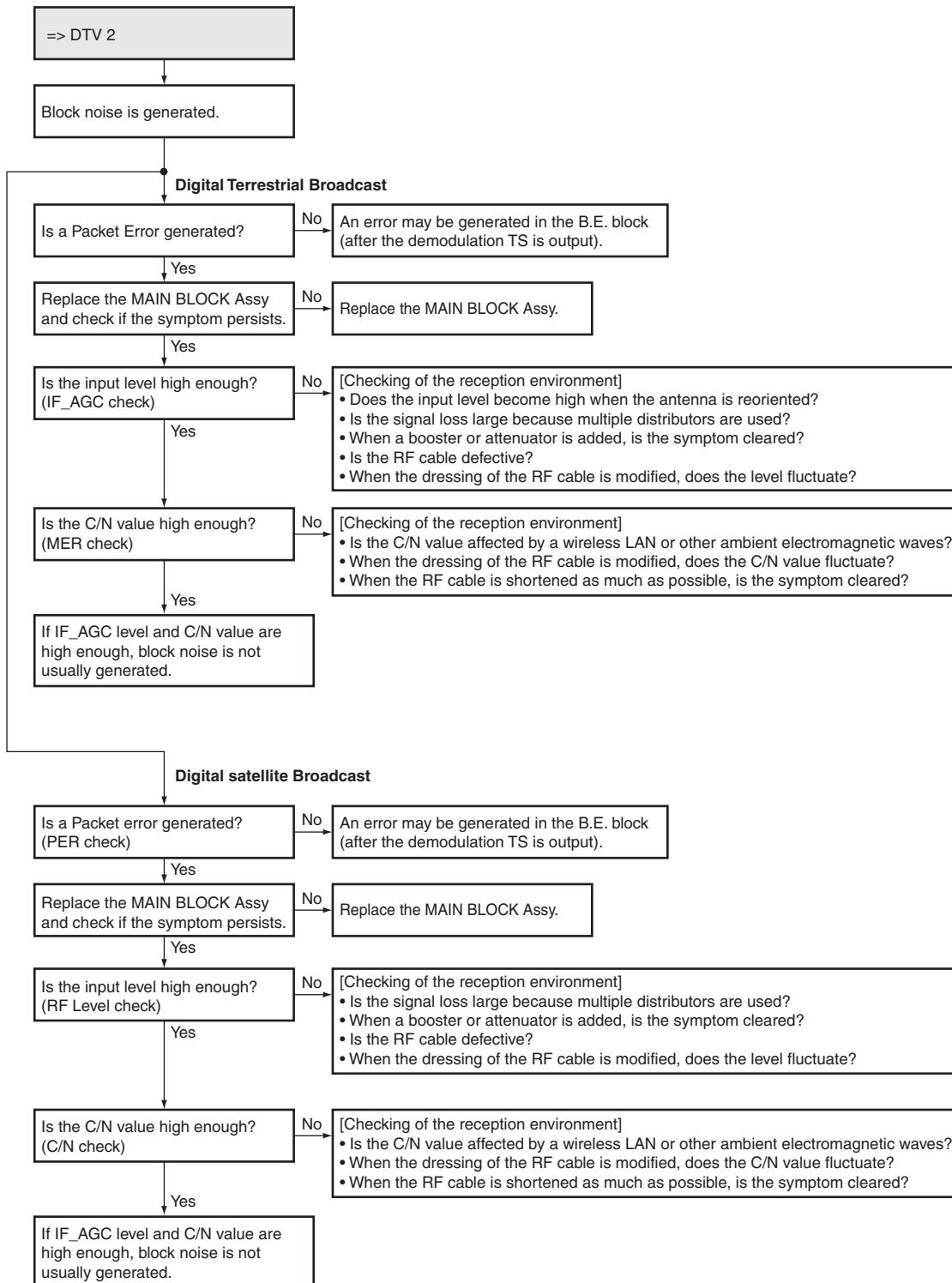
Hup: H+1 V

■



E

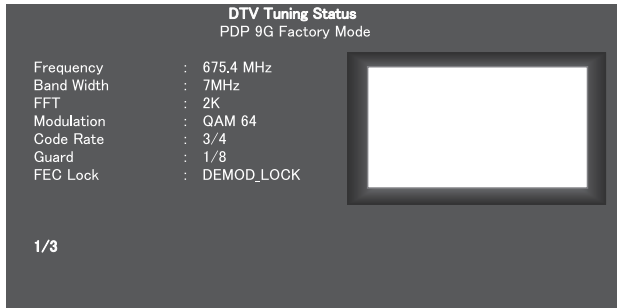
F



How to Confirm the DTV Tuning Status on the Digital Tuner Service Menu

If block noise is generated, it is necessary to acquire the DTV Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the DTV Tuning Status for another reception frequency of the signal in which block noise is not generated. The DTV Tuning Status page to be acquired is shown below:

DTV Tuning Status (1/3)



Frequency : Frequency of the signal currently being received.
 Band Width : Bandwidth of the signal currently being received.
 FFT : FFT mode of the signal currently being received (2K or 8K).

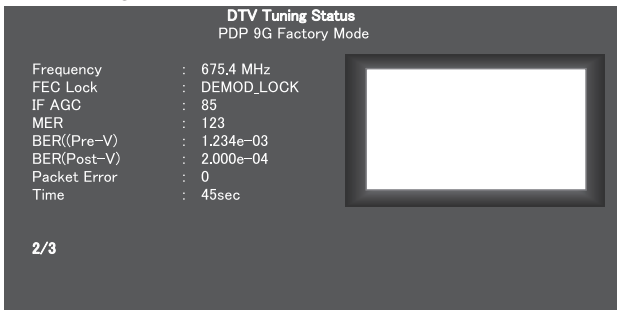
Modulation : Modulation method for the signal currently being received.

Code Rate : Code Rate of the signal currently being received.

Guard : Guard Interval of the signal currently being received.
 FEC Lock : Current lock status of the receiver. The available lock statuses are as shown below:

DEMOD_LOCK
 FEC_LOCK
 DRX_LOCK
 UNLOCK

DTV Tuning Status (2/3)



IF AGC : IF AGC level of the signal currently being received.

The AGC-level limits in normal reception are shown below.
 Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Code Rate	Signal-level Limit in Normal Reception
QPSK	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
16QAM	1/2	100
	2/3	100
	3/4	100
	5/6	100
	7/8	100
64QAM	1/2	100
	2/3	58
	3/4	56
	5/6	55
	7/8	54

BER (Pre-V) : Pre-Viterbi Bit Error Rate of the signal currently being received.

BER (Post-V) : Post-Viterbi Bit Error Rate of the signal currently being received. If the value is 2.000E-04, block noise is not caused by a problem in the tuner.

Packet Error : Packet error count of the signal currently being received. If the packet error count is "0," block noise caused by the tuner will not be generated.

Time : Measured duration of BER (Pre-V), BER (Post-V), or Packet Error. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

MER : Quality of the signal currently being received.
 The signal qualities in normal reception are shown below.
 Use the following values only as a guide.

Modulation	Code Rate	MER Limit in Normal Reception
QPSK	1/2	93
	2/3	85
	3/4	67
	5/6	76
	7/8	82
16QAM	1/2	98
	2/3	116
	3/4	127
	5/6	138
	7/8	145
64QAM	1/2	140
	2/3	170
	3/4	184
	5/6	197
	7/8	206

A

DTV Tuning Status (3/3)

DTV Tuning Status

PDP 9G Factory Mode

Program Number : 0x0101

Video PID : 0xABCD

Audio PID : 0x1234

PCR PID : 0x5678

Video Format : 1080i@60

Aspect : 16 : 9

3/3

Program Number : No. of the program currently being received.
Video PID : Video PID of the program currently being received.
Audio PID : Audio PID of the program currently being received.
PCR PID : PCR PID of the program currently being received.
Video Format : Video Format of the program currently being received.
Aspect : Aspect ratio of the program currently being received.

B

C

D

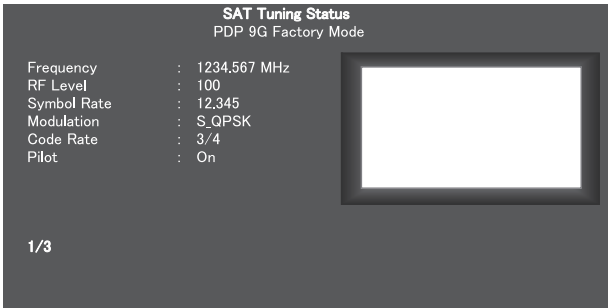
E

F

How to Confirm the SAT Tuning Status on the Digital Tuner Service Menu

If block noise is generated, it is necessary to acquire the SAT Tuning Status for the reception frequency of the signal in which block noise is generated. For comparison, it is also necessary to acquire the SAT Tuning Status for another reception frequency of the signal in which block noise is not generated. The SAT Tuning Status page to be acquired is shown below:

SAT Tuning Status (1/3)

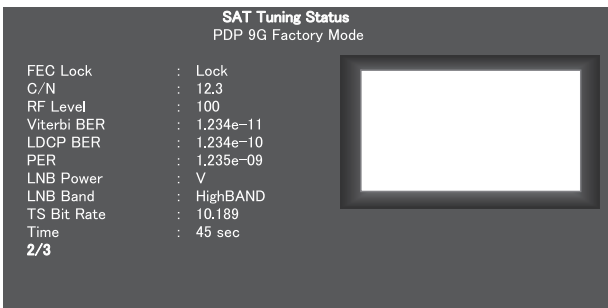


Frequency : Frequency of the signal currently being received.
 RF Level : Level of the signal currently being received.
 The signal-level limits in normal reception are shown below. Use the following values only as a guide, because they may be affected by the reception environment.

Modulation	Signal-level Limit in Normal Reception
S2_QPSK	50 to 75
S2_8PSK	50 to 75
S_QPSK	50 to 75

Modulation : Modulation method for the signal currently being received.
 Symbol Rate : Symbol Rate of the signal currently being received.
 Code Rate : Code Rate of the signal currently being received.
 Pilot : On/off status of the Pilot signal currently being received.

SAT Tuning Status (2/3)



FEC Lock : Current lock/unlock status of the error-correction function of the receiver.
 C/N : Current reception C/N. The limit C/Ns in normal reception are shown below. Use the following values only as a guide.

Limit C/N in normal reception

Modulation	Code Rate	Limit C/N in Normal Reception	Modulation	Code Rate	Limit C/N in Normal Reception
S2_QPSK	1/2	1.1	S2_8PSK	3/4	8.1
S2_QPSK	3/5	2.4	S2_8PSK	5/6	9.6
S2_QPSK	2/3	3.2	S2_8PSK	8/9	11.0
S2_QPSK	3/4	4.2	S2_8PSK	9/10	11.3
S2_QPSK	4/5	4.8	S_QPSK	1/2	5.2
S2_QPSK	5/6	5.3	S_QPSK	2/3	7.0
S2_QPSK	8/9	6.4	S_QPSK	3/4	8.0
S2_QPSK	9/10	6.6	S_QPSK	5/6	9.1
S2_8PSK	3/5	7.9	S_QPSK	7/8	9.8
S2_8PSK	2/3	8.0			

Viterbi BER : Bit error rate while the S_QPSK signal is being received. While the S2_QPSK or S2_8PSK signal is received, **** is displayed. If the value is 2e-4 or less, block noise is not caused by a problem in the tuner.

LDOP BER : Bit error rate while the S2_QPSK or S2_8PSK signal is being received. While the S_QPSK signal is received, **** is displayed.

PER : Packet error rate during reception. If the value is 0.000e-00, block noise is not caused by a problem in the tuner.

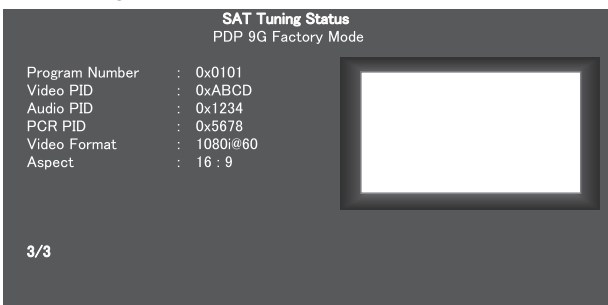
LNB POWER: Voltage currently being supplied to the LNB

LNB BAND : Frequency band that is currently set to the LNB

TS Bit Rate : TS Bit Rate of the signal currently being received

Time : Measured duration of Viterbi BER, LDOP BER, or PER. To reset the value to 0 and restart measuring, press the ◀ or ▶ key on the remote control unit.

SAT Tuning Status (3/3)



Program Number : No. of the program currently being received.

Video PID : Video PID of the program currently being received.

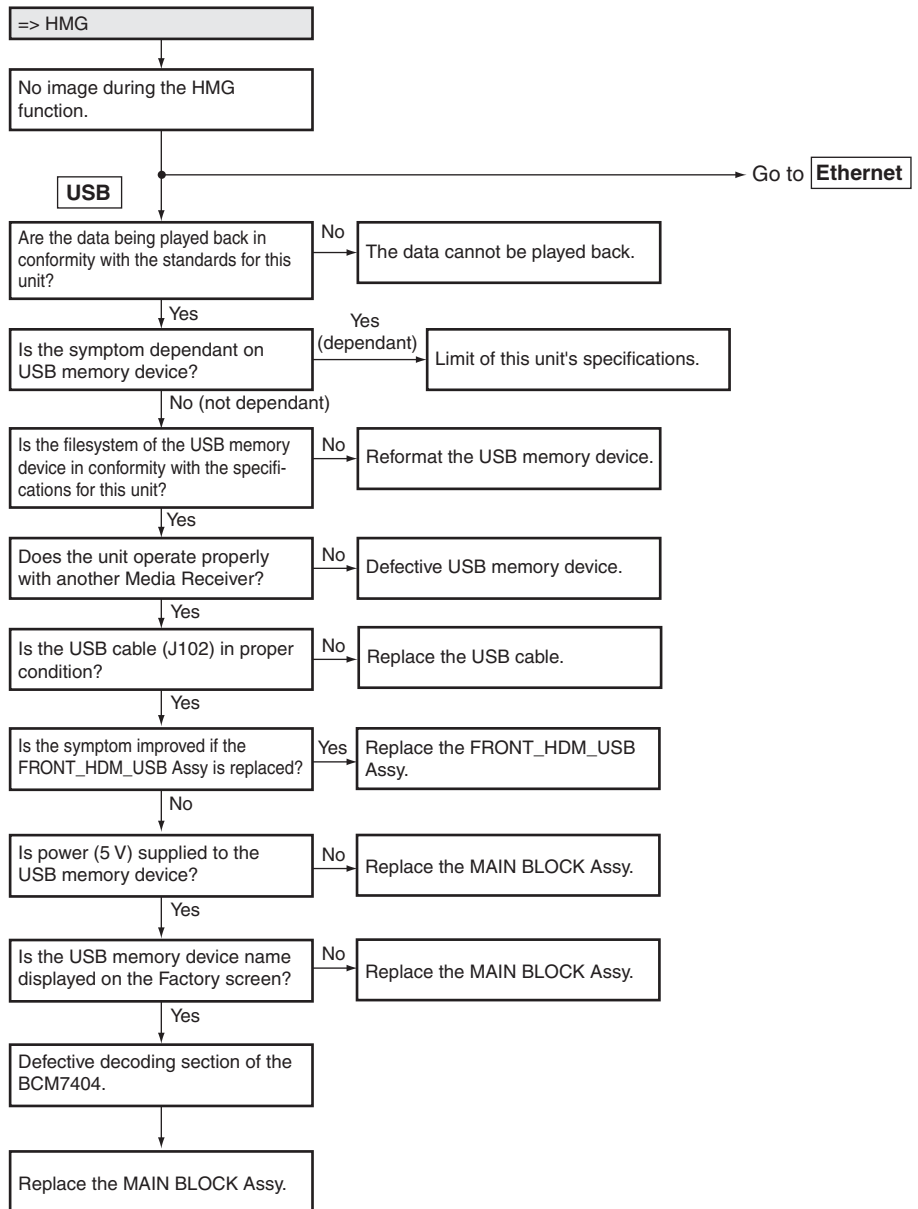
Audio PID : Audio PID of the program currently being received.

PCR PID : PCR PID of the program currently being received.

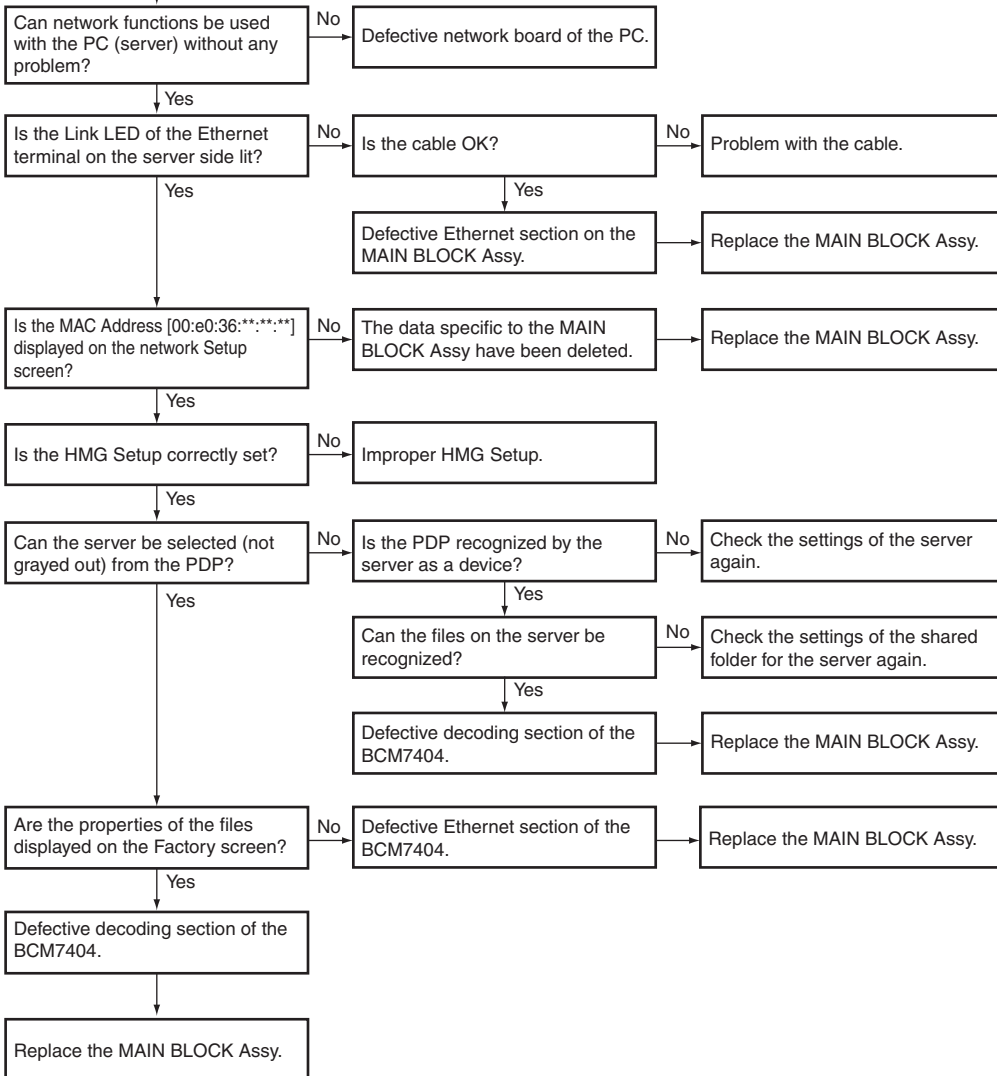
Video Format : Video Format of the program currently being received.

Aspect : Aspect ratio of the program currently being received.

Flowchart of Failure Analysis for The HMG



A

Ethernet

B

C

D

[HMG] How to enter DTB Service menu

Note: Use the remote control unit that supports Factory mode, because the DTB Service menu is accessible from Factory mode.

Step 1: Press the FACTORY key on the remote control unit to display the INFORMATION screen of Factory mode.

Step 2: Press the MUTING key on the remote control unit 4 times to display the INITIALIZE screen.

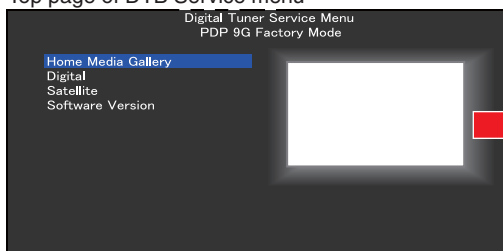
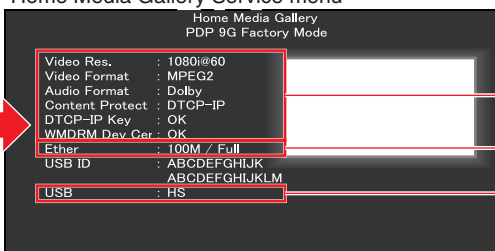
Step 3: Press the ↓ key on the remote control unit twice to display the “DTB SERVICE MODE (+)” indication at the bottom of the screen.

Step 4: Press the ENTER/SET key on the remote control unit to display the “MODE SHIFT <=>: No” indication at the bottom of the screen.

Step 5: Press the ← or → key on the remote control unit until the “MODE SHIFT <=>: YES” indication is displayed at the bottom of the screen.

Step 6: Press and hold the ENTER/SET key on the remote control unit pressed for 5 seconds or more to activate DTB Service menu.

The Home Media Gallery (HMG) Service menu is indicated below:

Top page of DTB Service menu**Home Media Gallery Service menu**

Content data

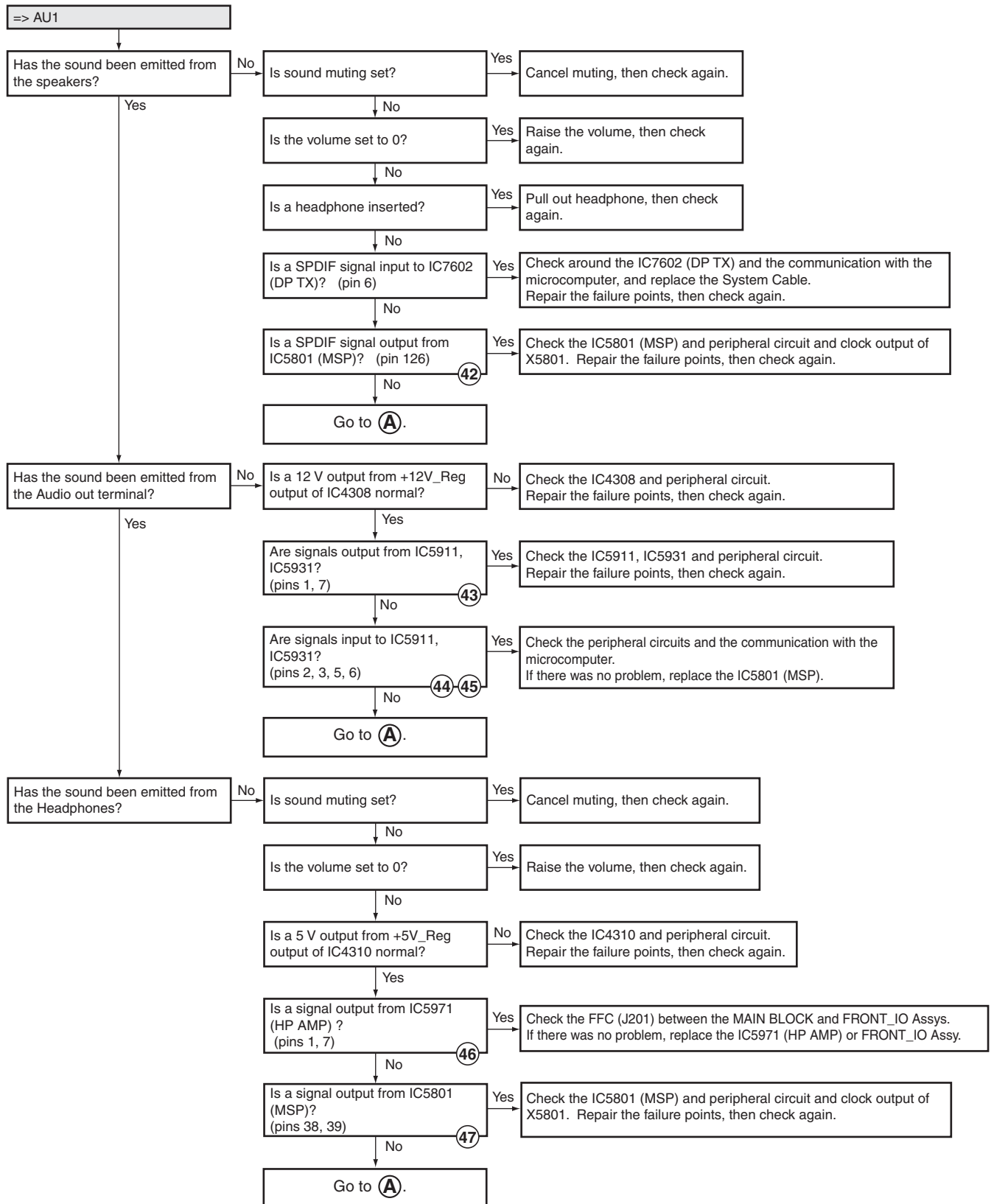
Ethernet connection information

USB device information

F

[5] AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System



A

A

Has the sound of the Analog broadcasting output?

No

Is a SIF signal input to IC5801? (pin 68)

No

Check the communications between the U5301 (FRONTEND) and the microcomputer and between the U5301 and IC5801. If there was no problem, replace the U5301 (FRONTEND), then check again.

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

B

Has the sound of the Digital broadcasting output?

No

Is a I2S signal input to IC5801 (MSP)? (pins 100 to 102)

No

Is a signal output from IC6001 (BCM7404) of the MAIN BLOCK Assy?

No

Repair the DTB block or replace the MAIN BLOCK Assy.

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

Check around IC6001 (BCM7404) and repair the failure points, then check again.

C

Has the sound of the HDMI output?

No

Check that the HDMI switch of the MENU is properly set.

No

Set a MENU definitely, then check again.

Yes

Is a SPDIF signal output from IC4901 (HDMI RX)? (pin 78)

No

Check the circuits between IC5001 (HDMI SW) and IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

INPUT_1, 3, 4

No

Check the FFC (J101) between MAIN BLOCK and FRONT_HDM_USB Assys. If there was no problem, replace the FRONT_HDM_USB Assy.

INPUT_5

No

Is a SPDIF signal input to IC5801 (MSP)? (pin 4)

No

Check the communications around the IC4901 (HDMI RX). If there was no problem, replace the MAIN BLOCK Assy.

INPUT_1, 3, 4

No

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

D

Has the sound of the INPUT 1, 3 (SCART) output?

No

Is a signal input to IC5801? (pins 24, 25, 36, 37)

No

Check the circuits between JA7502 (SCART) and IC5801. If there was no problem, replace the MAIN BLOCK Assy.

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

E

Has the sound of INPUT 2 (SCART, RCA) output?

No

Is a signal input to IC5801 (MSP)? (pins 26, 27, 34, 35)

No

Check the FFC (J203) between the MAIN BLOCK and REAR_IO Assy. If there was no problem, replace the REAR_IO Assy.

Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

F

Has the sound of INPUT 5, PC (RCA) output?

No

Is a signal input to IC5801 (MSP)? (pins 30, 31)

No

Check the FFC (J201) between the MAIN BLOCK and FRONT_IO Assy. If there was no problem, replace the FRONT_IO Assy.

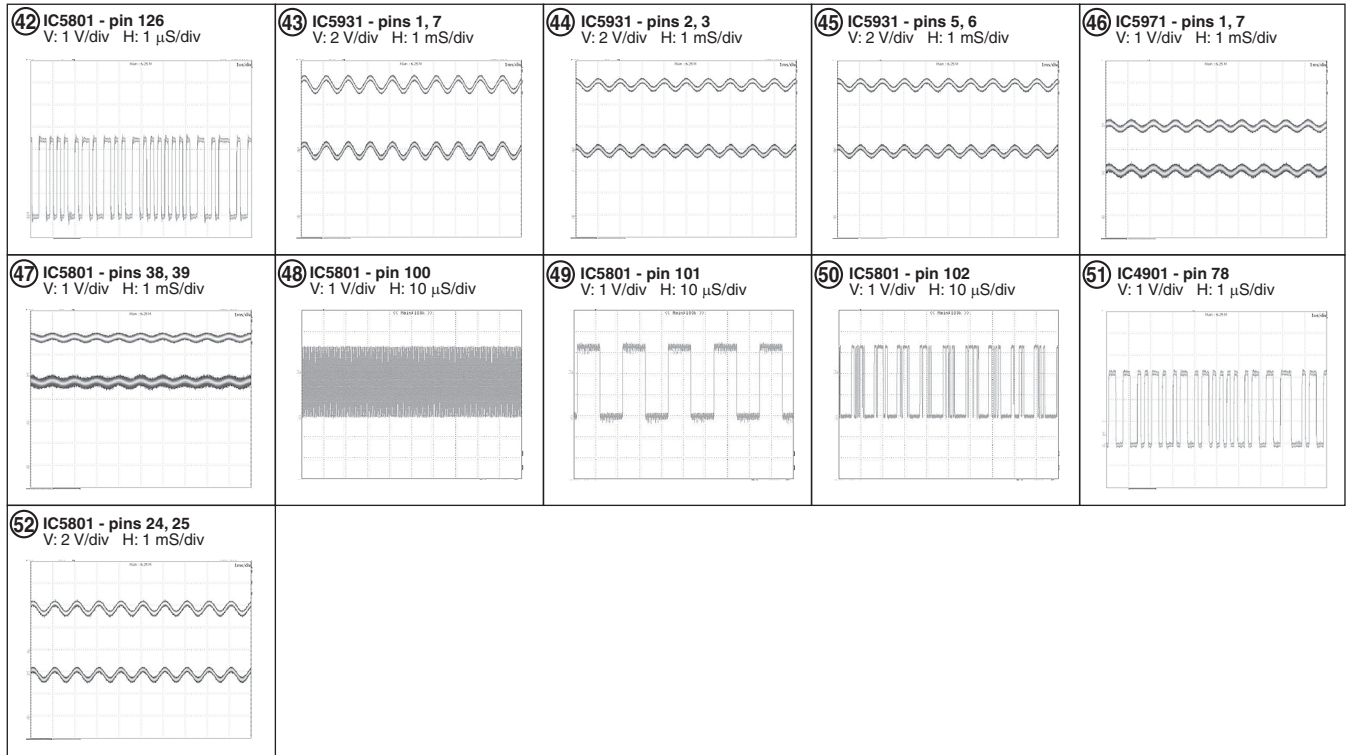
Yes

Check the communications around the IC5801 and between the IC5801 and the microcomputer. If there was no problem, replace the IC5801 (MSP), then check again.

A

Waveforms

Input signal: L/R 1 kHz, 0.5 Vrms (VOL 30)



B

C

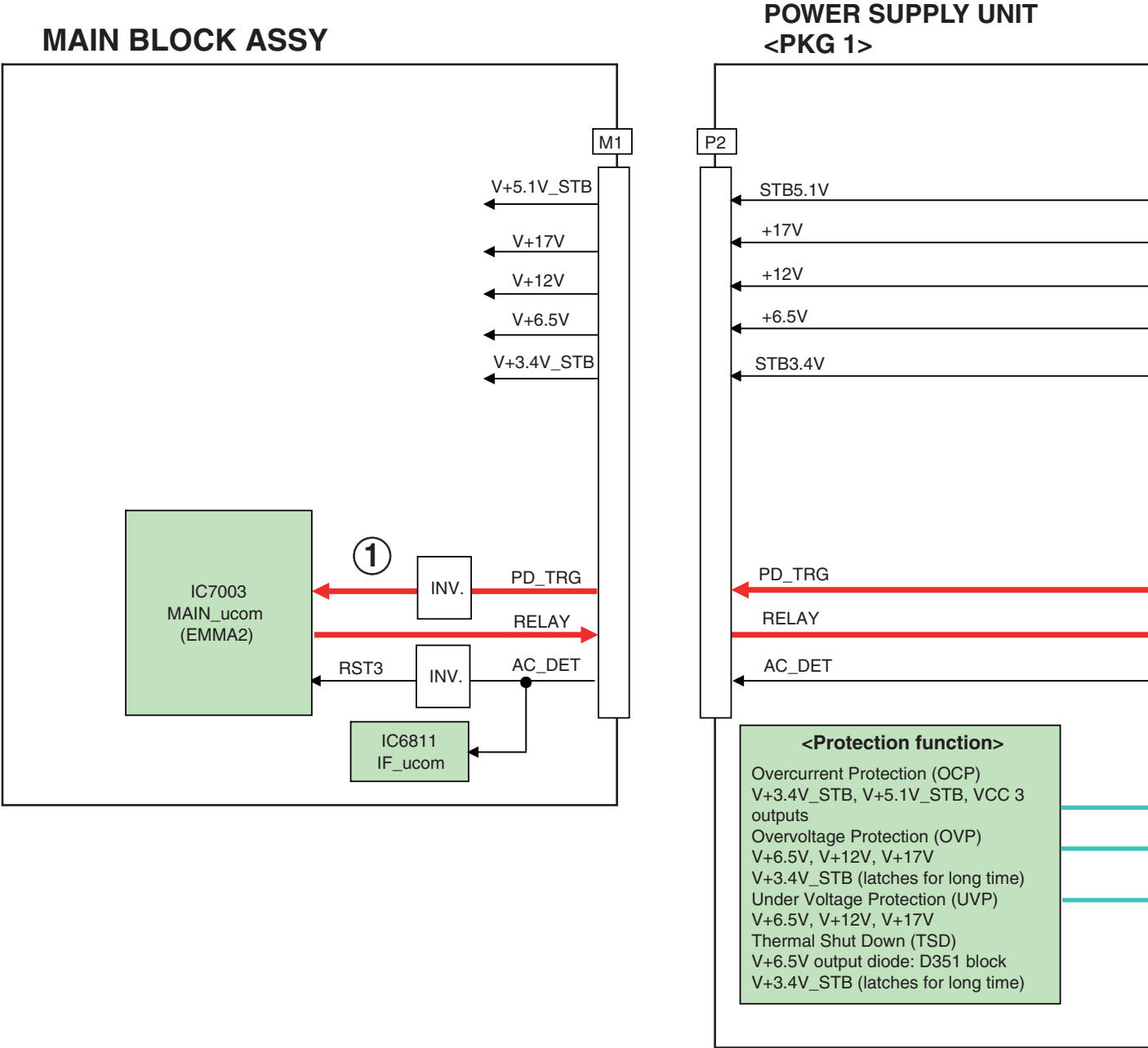
D

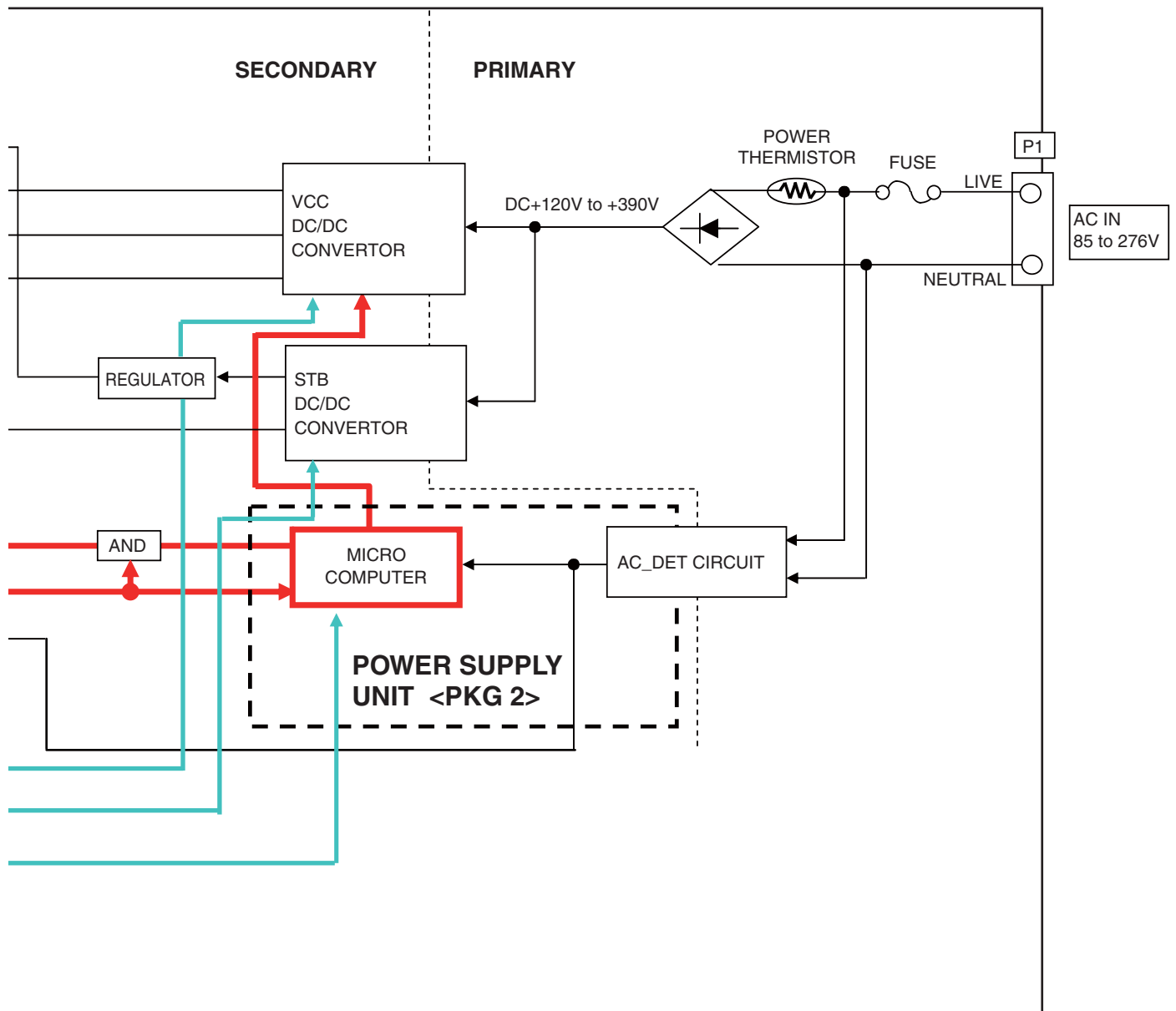
E

F

[1] BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

Note:
The figure ① indicate the number of times the Red LED flashes when power-down occurs in the corresponding route.





[2] PD (POWER-DOWN) DIAGNOSIS OF FAILURE ANALYSIS

How to Distinguish the PD (Power-Down)

About the LED for checking causes of power-down

No LED for checking causes of power-down is provided for the POWER SUPPLY Unit of the MR. However, by checking the waveforms at terminals of the microcomputer, whether a power-down was caused by failure in the POWER SUPPLY Unit, and if it was, which power system among the four was in failure can be inferred. The points at which to check waveforms and how to distinguish power-down causes are described below:

<Points at which to Check Waveforms>

Waveforms between Pin 3 of CN801 and GND (secondary radiator, display chassis, etc.) Refer to the section "Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup" in the "7.2 DISASSEMBLY".

<How to Distinguish>

If a power-down was caused by failure in the POWER SUPPLY Unit, a pulse waveform is output at the above-mentioned points. (It is assumed that STB3.4 V power is properly output.)

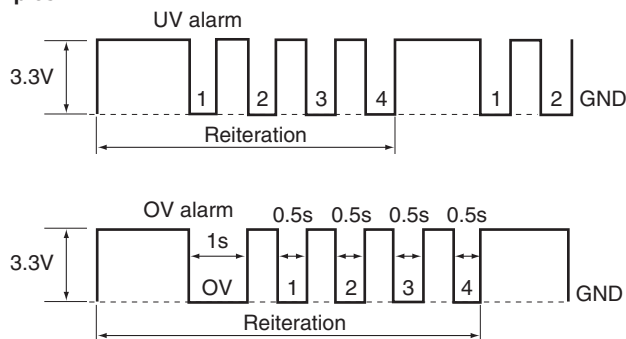
By counting the frequency of "Lo" in the pulse waveform, the cause of power-down can be identified.

Frequency of "Lo"	Cause	
	Output Voltage	Overvoltage (OV) or Undervoltage (UV)
Once	+12V	OV or UV *
Twice	+17V	OV or UV *
3 times	+6.5V	OV or UV *
4 times	Protection against overheat	

*How to distinguish OV and UV:

If the first "Lo" duration of a pulse is long (1 s), the cause is OV. As the three output voltages are electromagnetically linked and interact with one another, the frequency may vary among 1-3, depending on the type of power-down.

Examples:



How to Diagnose the PD

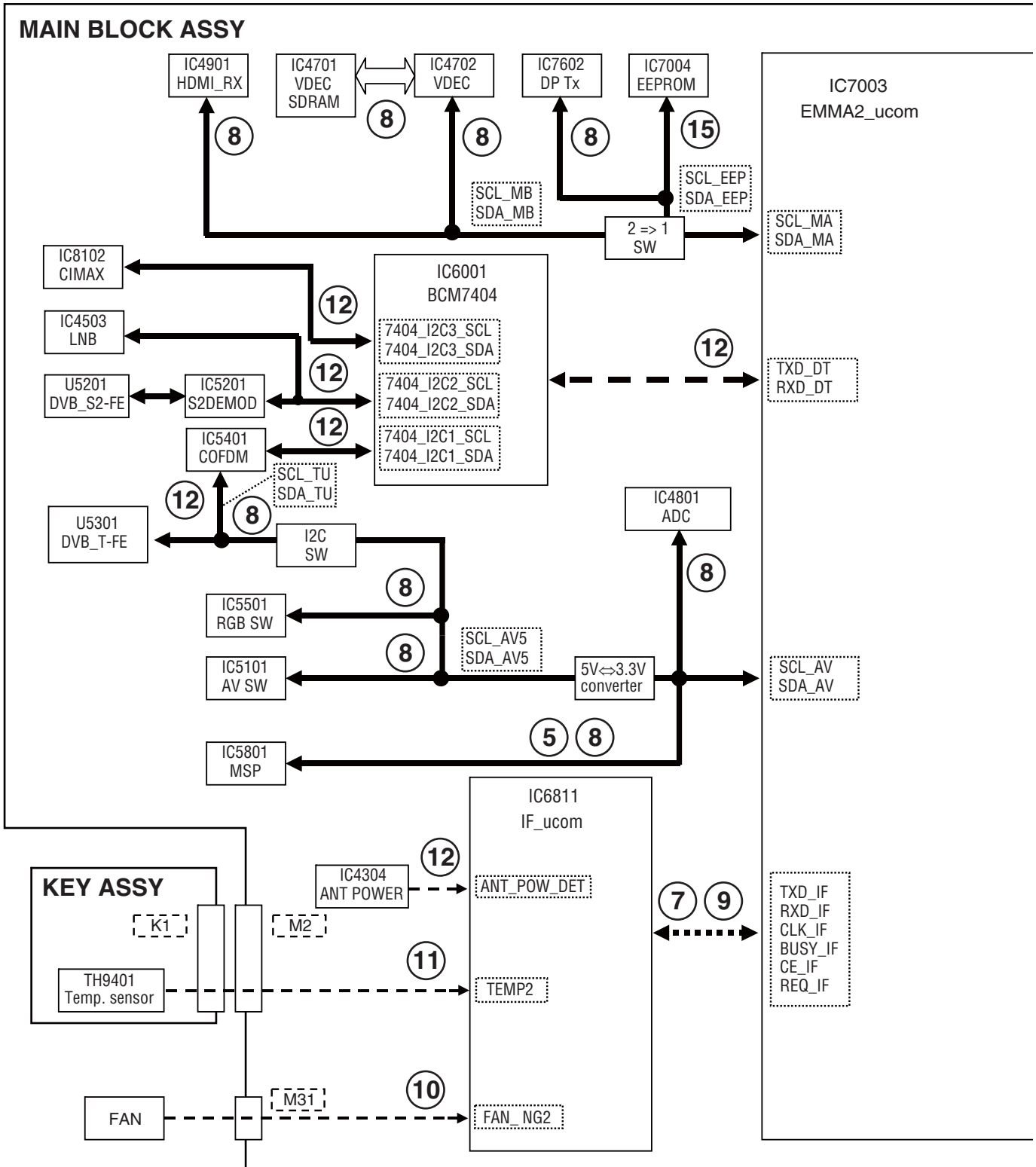
Frequency of LED Flashing	History Indication in Factory Mode	Assy	Cause of power-down (activated protection circuit)	Point to be Checked	Possible Defective Parts
Red, once	MR-PWR	MAIN BLOCK Assy	Overcurrent in 6.5 V power	5V_ANT-REG	IC4305, C4305
				5V_IO-REG	IC4310, C4301
				3CH-DD converter	IC4402 C4405, C4406, C4409, C4463, C4464, C4466 to C4468
				FET	Q4417, Q4416, Q4411
				1CH-DD converter	IC4501, C4517
			Overcurrent in 12 V power	FAN-REG	IC4302, C4342
				8V_IO-REG	IC4309, C4315
				LNB	IC4503
			Overcurrent in 17 V power	12V_IO-REG	IC4308, C4303
			Overcurrent in 3.4 V power	1.8V_IO-REG	IC4604, C4609 C4820, C8103
		POWER SUPPLY Unit	V+6.5V UVP	TP V+6.5V	Voltage drop due to overcurrent on the load side
			V+12V UVP	TP V+12V	Voltage drop due to overcurrent on the load side
			V+17V UVP	TP V+17V	Voltage drop due to overcurrent on the load side
			STB3.4V OCP	TP STB3.4V	C151, C153, C152, D152, or Z152, and abnormal current on the load side that is connected to STB3.4 V power
			STB5.1V OCP	TP STB5.1V	C155 and abnormal current on the load side that is connected to STB5.1 V power And abnormal current on the load side that is connected to STB5.1 V power
			VCC OCP	TP V+6.5V	D351, C351, C352, C353, and abnormal current on the load side that is connected to V+6.5V power
				TP V+12V	D352, C357, C358, and abnormal current on the load side that is connected to V+12V power
				TP V+17V	D353, C359, and abnormal current on the load side that is connected to V+17V power
			STB3.4V OVP	TP STB3.4V	PC121
			VCC OVP	TP V+6.5V TP V+12V	PC301, Breakage in the line to/from the P2 output connector
			STB3.4V TSD		Z121 control IC and abnormal current on the load side that is connected to STB3.4 V power
			V+6.5V Rectifier diode (D351) TSD		D351 or D352, and abnormal current on the load sides that is connected to V+6.5 V and V+12 V

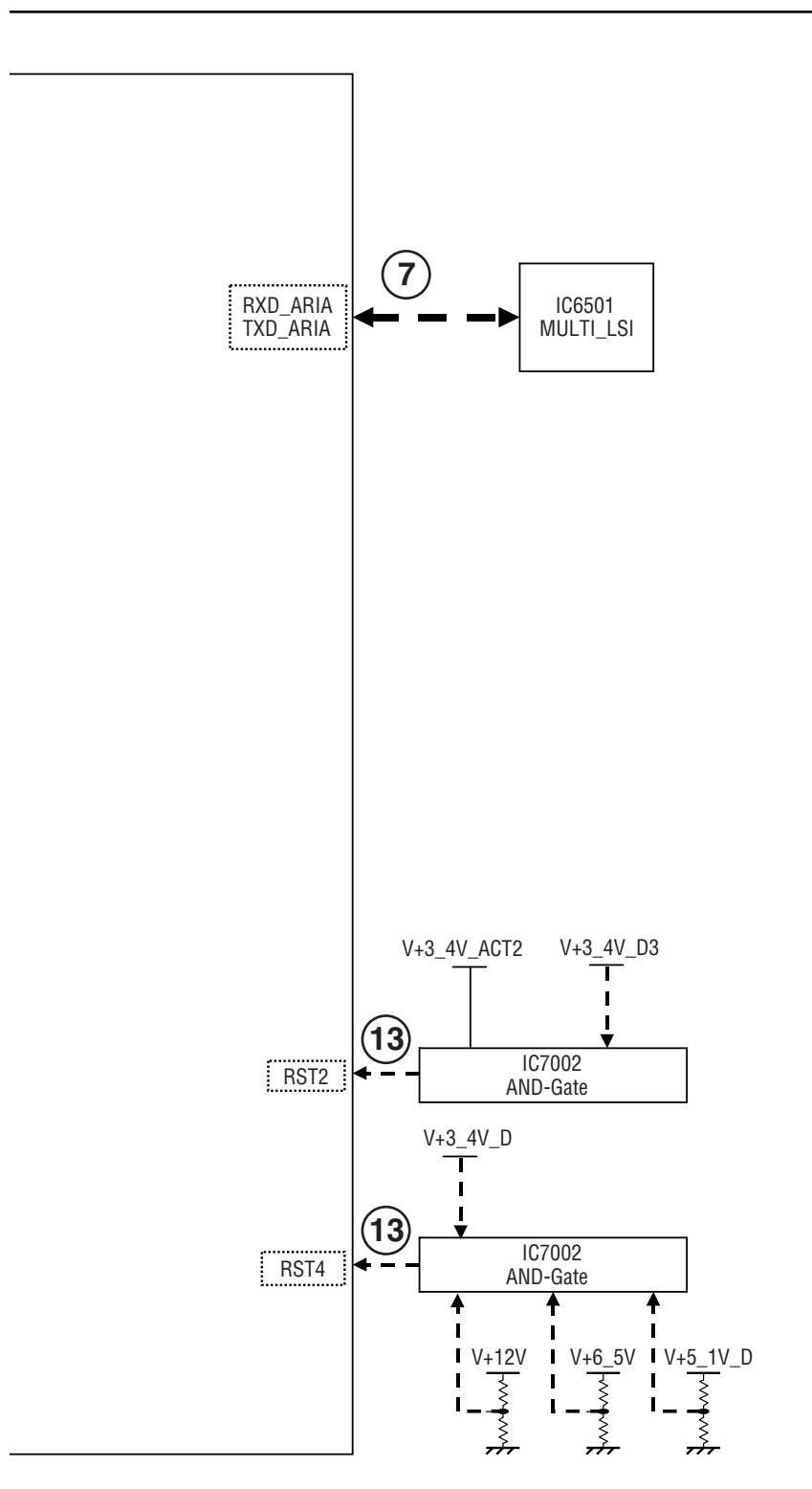
Note: Although replacement of the whole POWER SUPPLY Unit is required (replacement of only defective parts on the POWER SUPPLY Unit is not possible), the circuit symbols are described for reference

5.4 DIAGNOSIS OF SD (SHUTDOWN)

[1] BLOCK DIAGRAM OF THE SHUTDOWN SIGNAL

Note : The figures ① to ⑮ indicate the number of times the Blue LED flashes when shut-down occurs in the corresponding route. ⑫ LED is not flashed.





[2] SD (SHUTDOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		
			MAIN	SUB	
Blue 5	Audio	Abnormality in MSP	AUDIO	MSPMAP	
Blue 7	Failure in 3-wire serial communication with the main microcomputer	IF microcomputer	MA-3L	IF	
		MULTI		MULTI	
Blue 8	Failure in IIC communication with the main microcomputer	Tuner1	MA-IIC	FE1	
		MSP/MAP		MSPMAP	
		AV Switch		AV-SW	
		RGB Switch		RGB-SW	
		Main VDEC		VDEC	
		VDEC SDRAM		SDRAM	
		AD/PLL		ADC	
		HDMI		HDMI	
Blue 9	Failure in communication with the main microcomputer	DisplayPort Tx		DP-TX	
		–	MAIN	–	
Blue 10	Abnormality in FAN	FAN2	FAN	FAN2	
Blue 11	High temperature of the unit	–	TEMP2	–	
Blue 12 (Actually, Blue 12 LED is not flashed.)	Digital Tuner	DTV start up error	DTUNER	PS/RST	
		DTV communication error		RETRY	
		DEVICE ERR		DEVICE	
		Tuner1		DE-FE	
		DTV Antenna		D-ANT	
		Application		DTVAPP	
		COFDM		DEMODO	
		Tuner S2		DE-FES	
		S2DEMODO		DEMODO	
		LNB		DE-LNB	
		S2 Antenna		S-ANT	
Blue 13	Failure in the power supply	DC-DC Converter power decrease	RST-MA	M-DCDC	
		POWER SUPPLY		RELAY	
Blue 15	Main EEPROM	Main EEPROM communication error	MA-EEP	–	

A

Checkpoint	Possible Defective Part	Remarks
Power supply for MSP and MSP	IC5801, IC4604, Q4616	Check the MSP, its power and periphery parts (e.g. reset line).
Communication line between IF and MAIN	IC7003, IC6811	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Communication line between MULTI and MAIN	IC7003, IC6501	Check the communication lines (TXD_ARIA/RXD_ARIA)
IIC communication line between Tuner and MAIN	U5301, IC7003	Check the communication lines (SCL_TU/SDA_TU or SCL_AV/SDA_AV)
IIC communication line between MSP/MAP and MAIN	IC5801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between AV_SW and MAIN	IC5101, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between RGB_SW and MAIN	IC5501, IC7003	Check the communication lines (SCL_AV5/SDA_AV5)
IIC communication line between M_VDEC and MAIN	IC4702, IC7003	Check the communication lines (SCL_MB/SDA_MB)
Communication line between VDEC and SDRAM	IC4701, IC4702	Check the communication lines (SDRAM), Failure in SDRAM
IIC communication line between ADC and MAIN	IC4801, IC7003	Check the communication lines (SCL_AV/SDA_AV)
IIC communication line between HDMI_RX and MAIN	IC4901, IC7003	Check the communication lines (SCL_MB/SDA_MB)
IIC communication line between DP_TX and MAIN	IC7602, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)
Communication line between IF and MAIN	IC6811, IC7003	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF)
Dirt attached to the fan motor		Check the fan. (SD10 does not detect it at the temperature that fans do not turn.)
Periphery of the FAN		FAN_NG
Periphery of the cable at M31		Check if cables are firmly connected.
Periphery of the fan control regulator	IC4302	Check that the voltage outputs it.
Ambient temperature		TEMP2 A shutdown occurs because of high temperature.
Temperature sensor or its periphery	TH9401	TEMP2
Periphery of the cable between M2 and K1	CN4204, CN9401	Check if cables are firmly connected.
Startup of BCM7404	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Communication line between BCM7404 and MAIN	IC6001	Check the startup of the BCM7404 and the communication line with MAIN
Periphery of the BCM7404	IC6001	
Front-end block	IC6001, U5301	Check the BCM7404, terrestrial tuner and periphery devices.
Antenna supply voltage	IC4304	Check the IC4304 (overcurrent detection IC), its periphery devices and antenna connection line.
DTV application	IC6001	
COFDM	IC5401	Check the communication line between BCM7404 and COFDM
Tuner S2	U5201	Check the communication line between S2DEMOD and F.E.
S2DEMOD	IC5201	Check the communication line between BCM7404 and S2DEMOD
LNB	IC4503	Check the communication line between BCM7404 and LNB IC, and check the periphery parts of LNB IC.
Antenna supply voltage	IC4503	Check the LNB IC and periphery parts, and antenna connection line.
RST2 V+3_4V_ACT2, V+3_4V_D3	IC7002	Check if each voltages are started.
RST4 V+12V, V+6_5V, V+5_1V_D, V+3_4V_D	IC7002	Check if each voltages are started.
V+12V, V+6_5V, V+17V	POWER SUPPLY Unit	Check if each voltages are started.
Check the cable M1	CN4203	Check if cables are firmly connected.
IIC communication line between EEPROM and MAIN	IC7004, IC7003	Check the communication lines (SCL_EEP/SDA_EEP)

C

D

E

F

5.5 NON-FAILURE INFORMATION

[1] INFORMATION ON SYMPTOMS THAT DO NOT CONSTITUTE FAILURE

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 1 or 3 to 5 signal is not correct.	The color setting for INPUT 1 or 3 to 5 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 1 or 3 to 5 is not displayed, and a message is displayed.	A unsupported video signal is input.
The audio signal input to the INPUT 1 or 3 is not output. No HDMI signal is input.	The audio setting for INPUT 1 or 3 is any setting, and a video signal is not input. If the audio setting is any setting, to output an analog audio signal, the HDMI signal must be input. (If a DVI device is to be connected, use a DVI-HDMI conversion cable.) If the HDMI video signal is not input, the analog audio signal is not output.
No sound of signals to INPUT 1 or 3 to 5 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
The 1080p input signal is not displayed properly or at all, although the 1080i input signal is displayed properly.	Check that the connected cable supports HDMI Category 2. (As the clock frequency for the 1080p signal is triple that for the 1080i signal, signal degradation caused by a cable must not be neglected. A cable supporting HDMI Category 2 can be used for the 1080p signal. Although some conventional cables can support the 1080p signal, some others cannot.)
SCART video output	
The video output signal from the SCART connector is deteriorated. Or when the video output signal from the SCART connector is recorded, its playback picture is deteriorated.	The video signal output from the SCART connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2.	The video signal is not output from the SCART connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 1 or 3 to 5.	The video signal is not output from the SCART connector when the HDMI signal is selected.
AUDIO OUT and SCART	
The image displayed on the PDP is not synchronized with the sound from the SCART.	The audio signal from the SCART connector is synchronized with the video output signal from the SCART connector. And the audio signal from the AUDIO OUT is synchronized with the video signal that is currently displayed.
DIGITAL OUT	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The digital audio output signal from the DIGITAL connector is not synchronized with that from the SCART video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the SCART video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off and no-operation off functions are effective only if video (composite, S video, component, HDMI [excluding PC]) input or TV input is selected.
The no-operation off function is not activated.	
Power management does not function.	Power Management is effective only while an analog PC signal is being input. It is not effective with HDMI-PC signal input.
The AUTO SETUP function is not activated.	The Auto Setup function is effective only while an analog PC signal is being input. This function does not work if an analog PC signal is not input, even if the INPUT PC is selected.
Control via the SR connector is not possible.	Wrong connection of the cable to the PC INPUT (AUDIO) connector is suspected.
The audio signal from the PC is not output.	Wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON.
The display position of the screen changes slightly while the screen is on.	The orbiter function for minimizing the effects of phosphor burn is activated. Although the setting for this function can be changed on the Home menu, retaining the factory setting is strongly recommended.
The video signal to the S video connector is not displayed.	As the signal input to the connector that has been selected on the INPUT SELECT submenu of the Home menu is selected (this does not apply to the connectors located on the side of the unit), check the menu setting. If the output signal is not available even if the input signal is properly selected, input a signal to other input functions, check the connecting cables, or check the settings for the connected equipment. Note that if cables are connected to both the HDMI connector and composite video connector of INPUT 5, the HDMI connector will have priority over the composite video connector.
The video signal to the composite video connector is not displayed.	

SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4. (The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

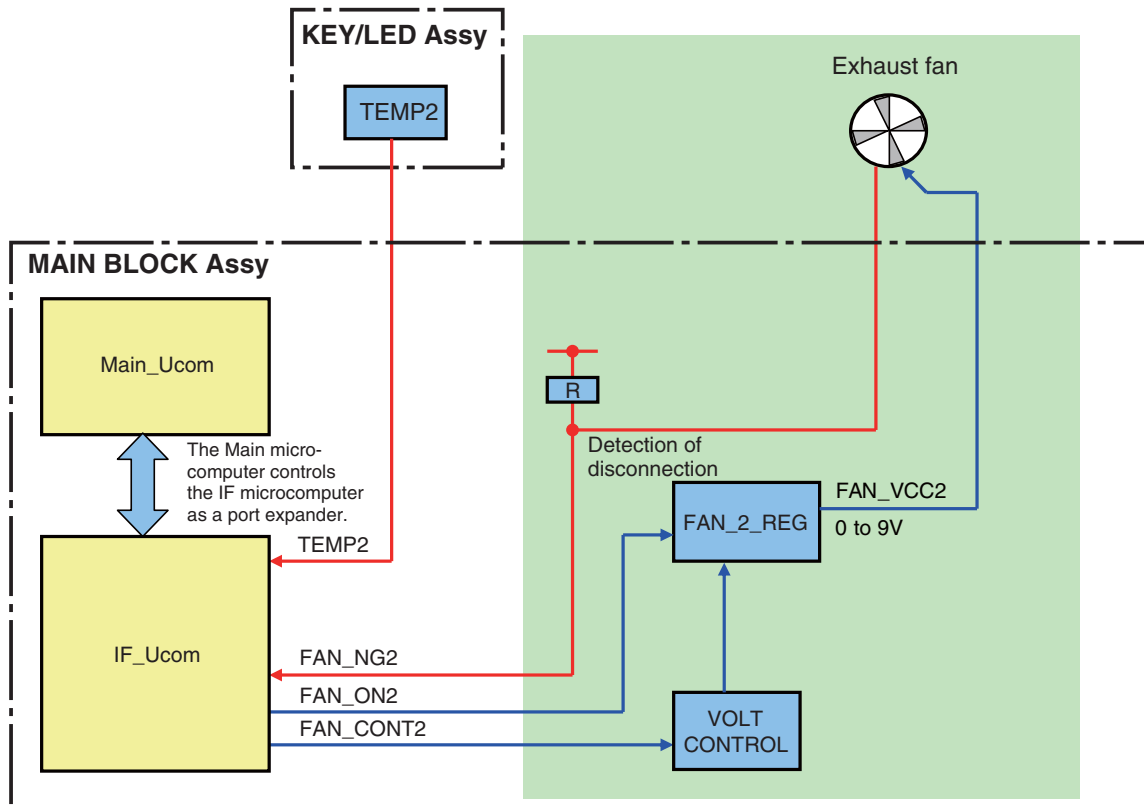
It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.

In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

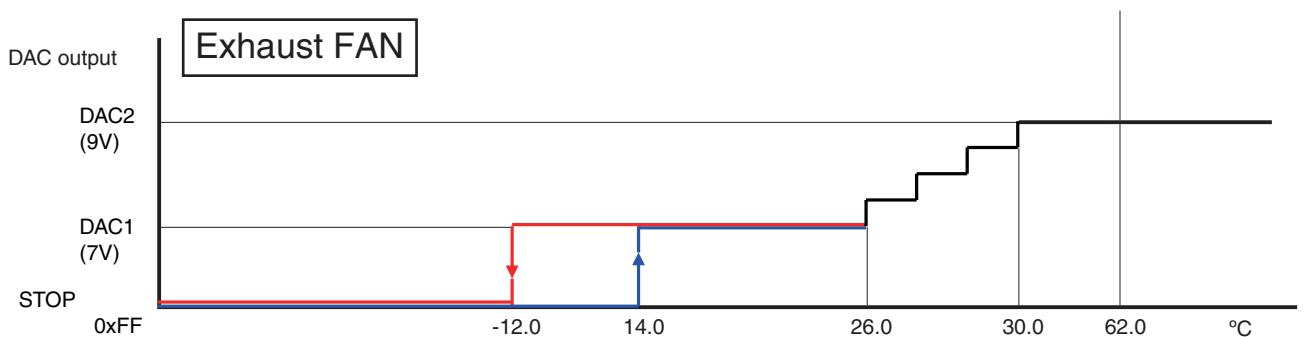
5.6 OUTLINE OF THE OPERATION

[1] SPECIFICATION OF THE FAN CONTROL

■ Block diagram



■ Operation specifications



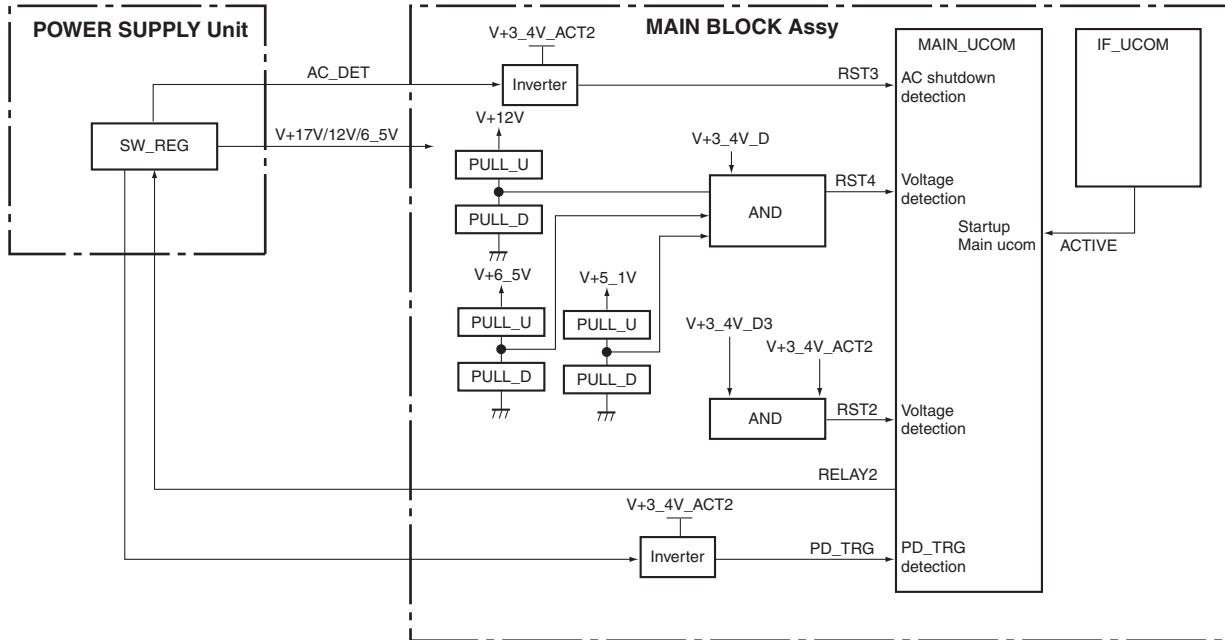
Notes:

- The operating temperature of the fan is different from the ambient temperature, because the sensor temperature is read by the microcomputer.
- The fan may not start rotating until the internal temperature of the unit reaches a certain level, such as immediately after the unit is turned on.
- When the temperature rises, the sensor voltage of TEMP2 decreases.
- When the voltage of the DAC output for exhaust FAN decreases, rotation speed of FAN rises.

[2] PROCESSING IN ABNORMALITY

Power supply and DC-DC converter

● Circuit configuration

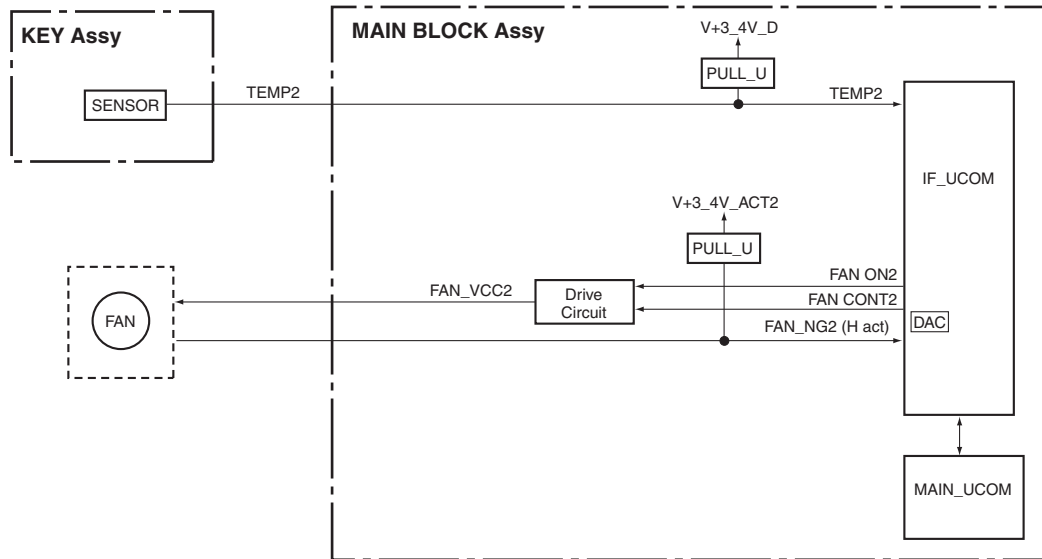


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
RST2	ASIC power (M-DCDC)	Shutdown occurs when the signal is "L." for 5 sec after PSW1 is ON. or for 2 sec while the unit is ON.	<ul style="list-style-type: none"> Panel screen ON (RST4 = H and PSW1 = H) While awaiting restoration of RST2 (RST2 = L) 	Shutdown occurs immediately Blue LED flashes 13 times
RST3	—	—	Excepting passive standby	If "RST3 = H" (AC_OFF) is detected under the monitoring conditions, a power-off process starts. Monitoring of the RST3 port is continued, and monitoring of other ports is interrupted. Communication is controlled only by the IF microcomputer. The port outputs are set as specified. If the signal at the RST3 port continues to be H after 30 mS of waiting, monitoring is continued. If RST3 is L, a restoration process starts according to the latest power-on/-off status.
RST4	MAIN power (RELAY)	Shutdown occurs if the signal is "L." for 5 sec after RELAY2 is ON. or for 2 sec while the unit is ON or in Functional STB.	RELAY2 = ON (High)	Shutdown occurs immediately Blue LED flashes 13 times
PD_TRG	VCC power (MR-PWR)	Shutdown occurs when the signal is continuously "L" for 30msec * 3 times after RELAY2 is ON.	<ul style="list-style-type: none"> RELAY2 = ON Monitor it after 3 sec. 	Power-down occurs immediately Red LED flashes once

Fan and temperature sensor

● Circuit configuration

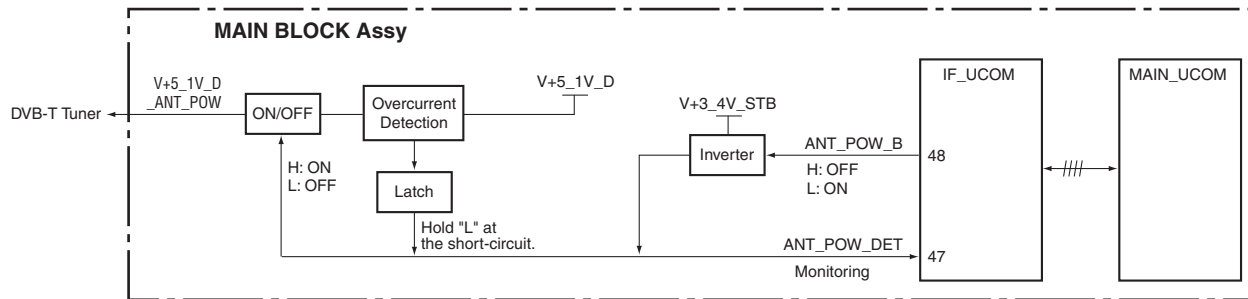


● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
FAN_NG2	FAN	Shutdown occurs when the signal is "H." 1 S * 3 times	RST4 = H and FAN_ON2 = H (Monitoring starts 3 sec after the above conditions are established.)	Shutdown occurs immediately Blue LED flashes 10 times
TEMP2	High temperature at MR	Shutdown occurs if any values equal to or greater than minimum to require a shutdown are detected. 1 S * 3 times	RST4 = H (Monitoring starts 1 sec after the above conditions are established.)	In the Panel screen ON: Shutdown occurs after the warning indication is displayed for 30 sec. In the Functional STB: Shutdown occurs immediately Blue LED flashes 11 times

Power supply for DVB-T Antenna for Europe

● Circuit configuration



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
ANT_POW_DET	DTB antenna short-circuited	Warning message is displayed when the signal is L (100 mS, 3 times)	RST4 = H and ANT_POW_B = L (Monitoring starts 1 sec after the above conditions are established.)	Output of a warning message for 60 sec.

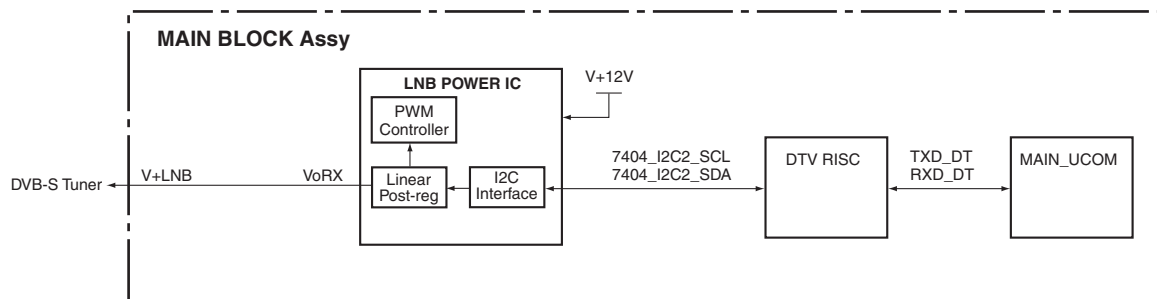
● Conditions of circuit reset

The circuit can be reset by unplugging then plugging the power cord back in (it will not be reset by Standby ON/OFF).

Power supply for DVB-S Antenna for Europe

● Circuit configuration

Note: Specifications for the output of warning-message indication will be added in the future.



● Specifications for port monitoring

Port Name	SD/PD Indication	Determination Condition	Monitoring conditions	Operation
—	S2 antenna short-circuited	Notification from DTV (at 7404_I2C2, OR of OLF bit and OTF bit of the LNB IC System Register is 1)	RST4: "H" and during reception of satellite broadcast	Output of a warning message for 60 sec. Only while a satellite broadcast program is displayed on the main screen.

● Conditions of circuit reset

The circuit will be automatically reset after an error, such as short-circuiting of the antenna, is resolved and the unit is restored.

[3] HOW TO OPERATE THE MEDIA RECEIVER SEPARATELY

● Necessary items for operation

- Media Receiver
- DP-to-HDMI conversion jig: GGF1627 (with the AC adaptor)
AC adaptor INPUT: 100 V to 240 V, 50/60 Hz, 0.3 A
OUTPUT: DC 6 V, 1.8 A $\ominus \text{---} \text{---} \oplus$
- Monitor or TV (with which an image with resolution of 1920 × 1080 p, 60 Hz can be displayed, with HDMI input)
Note: When checking with DVI monitor, setting change of this jig is required.
- DP cable (GGP1117) and HDMI cable
- G8 or G9 remote control unit (in case of controlling by remote control unit)
- PC and RS-232C straight cable (in case of controlling by PC)
- HDMI -DVI cable (in case of connecting with DVI monitor)

● Connection

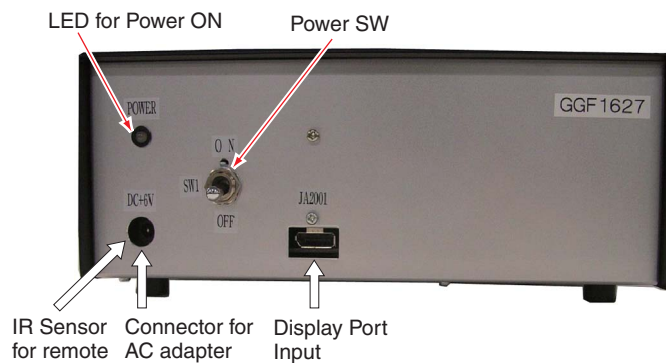


Fig.1 DP - HDMI Conversion tool (Front side)

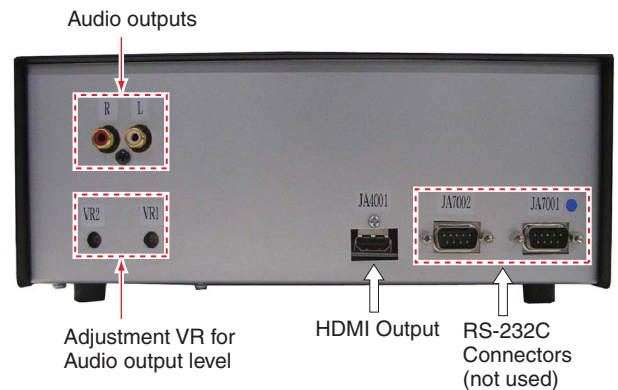


Fig.2 DP - HDMI Conversion tool (Rear side)

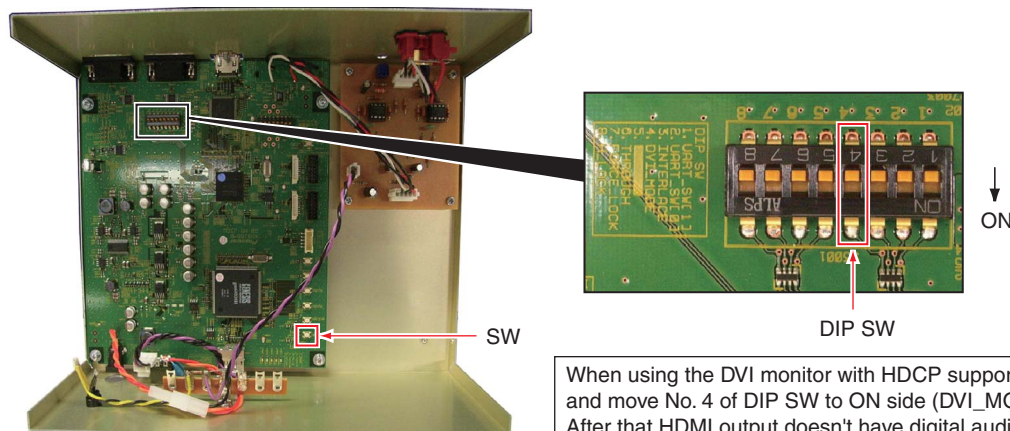


Fig.3 DP - HDMI Conversion tool
DIP SW Setting (output mode setting for HDMI connector)

A

● Preparation

- Set the MR from System Operation mode to Standalone Operation mode.
The MR is normally set to System Operation mode. If the MR is turned on in this mode, an error warning is issued (the red and blue LEDs alternately flash), and it cannot be operated properly.

To change to Standalone Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on. (The red and blue LEDs alternately flash to warn of an error.)
2. In this state, send the MRMS01 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL - key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

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● Operation

After the setting in Preparation is completed, turn the units on in the following order then perform analysis:

1. Turn the monitor or TV on. (Set the input mode to HDMI.)
2. Turn the DP-to-HDMI conversion jig on.
3. Turn the MR on.

If no image is displayed on the monitor or TV after the MR is turned on, press and hold the switch on the DP-to-HDMI conversion jig for about 1 sec.

● How to control the MR

- With the remote control unit:

The infrared receiver (IR) sensor for remote control unit is placed inside of the jig. Please point the remote towards the AC adaptor connector on the jig.

Unlike normal products, sensor reception of this tool is not so sensitive due to reduce interference with another Pioneer Plasma TV.

Please keep the distance between the remote control unit and the sensor less than 15cm.

- With RS-232C commands:

Connect a PC to the MR via their RS-232C ports and send RS-232C commands from the PC. (Baud rate: 9600 bps)

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● After analysis is finished

After analysis in Standalone Operation mode is finished, before returning the MR to the customer, be sure to return the unit to System Operation mode, as shown in the procedures below.

If it remains in Standalone Operation mode, when it is connected with the customer's monitor, the monitor will detect a connection error and not operate properly, and no image will be displayed.

To set the MR to System Operation mode, proceed as follows:

[With an RS-232C command]

1. Turn the MR on.
2. Send the MRMS00 command via RS-232C ports.
3. Turn the MR off.

When the MR is turned on next time or after, it will be in System Operation mode.

4. Connect the MR directly with the monitor and check that they operate properly.

[With the keys on the MR]

1. Set the MR to Standby mode.
2. Press and hold the INPUT key of the MR pressed for at least 5 seconds.
(This step is for giving a startup trigger in a case where the MR was in Passive Standby mode.)
3. Within 5 seconds after the INPUT key is released, press and hold the CHANNEL + key of the MR for at least 10 seconds.
4. After the modes are changed, the red LED flashes twice then is lit (the unit enters Normal Standby mode).
5. Turn the unit off.

When the MR is turned on next time or after, it will be in Standalone Operation mode.

● Products whose proper operation has been proved when HDMI connection is performed with this MR

Model Number	Manufacturer	Built-in Audio AMP
PDP-5000EX	Pioneer	○ (SP is required)
G8	Pioneer	○ (SP is required except 42 inch)
FP241WJ	BenQ	× (External audio amp and SP is required)
3008WFP	DELL	× (External audio amp and SP is required)
HD2441W	EIZO NANAO	× (External audio amp and SP is required)

● Attention point for audio volume

Audio output level is connected with MR volume level. If VR level of a MR is normal (around 10 - 15) and displayed HDMI TV or audio AMP is not so high level, sound level is very low. Please turn up the volume to appropriate level either or both units.

In case of turning up volume of MR to very high level during testing, turn down it to normal level and then turn off the unit. Otherwise when connecting the MR with panel, very loud sound is output from speakers and it might be a danger.

● Attention point when using another Pioneer Plasma TV

Please pay attention to interference of IR signal when using Pioneer plasma TV as HDMI monitor.

If remote signal is also received to Pioneer plasma TV when operating MR with this tool and remote, you might confuse of which unit is controlled by the remote.

The following methods are some of suggestions to control only MR with the conversion tool.

Using the remote control unit and the conversion tool (AC adaptor connector) as nearly as possible hiding remote sensor of the plasma TV temporally.

● Setting Method to connect with DVI monitor with HDCP support (DVI mode)

1. Open bonnet with power off condition.
2. Refer to Fig. 3, move the DIP SW No. [4] to ON side.
After this setting, DVI mode signal is output from HDMI output connector of HDMI.

Note: 1. Some of DVI monitors might not display output signal from this conversion tool.
2. Output signal does not contain digital audio signal.

5.7 OUTLINE OF RS-232C COMMAND

A

[1] PREPARED TOOLS

- It is necessary to prepare the following one to use 232C command.
- PC
 - Application for control
 - 232C cable (straight)
- * The setting of the Com port cannot be communicated if it doesn't do correctly.
(Please follow a set explanation of PC in the Com port)

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[2] USING RS-232C COMMANDS

Individual ports are provided for RS-232C and SR+ connectors with this model. Therefore, unlike the case of previous models, which required switching of exclusive operation between these connectors on the Integrator menu, switching is no longer required.

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5.8 LIST OF RS-232C COMMANDS

RS-232C command list

Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
A					
AMT	S00	Audio mute OFF			
	S01	Audio mute ON			
C					
CHN	FWD	Changing tuner preset channel (1 step forward)			
	REV	Changing tuner preset channel (1 step reverse)			
CHM		Clearing data of the hour meter		●	Last memory is performed to the panel side.
CHR		Clearing data of the hour meter of MTB/MR side			Clear the hour meter of screen display of MAIN NG.
CNG		Clearing data of the SD history of MTB/MR side			
D					
DPT		Rewriting the Display Port Tx			
DW*		To subtract * to the adjustment value (* = 0 to 9, subtract 10 with DW0 and set to minimum value with DWF)			
F					
FAN		Factory mode: OFF		●	
FAY		Factory mode: ON			
FST	S35	Set each memory setting of MTB/MR side to the shipment state.		●	
I					
INA	***	Switching the terrestrial analog signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial analog signal (Channnel is in the last.)	MAIN		
INC	***	Switching the terrestrial digital signal, direct tuning (***: channel number)	MAIN		
		Switching the terrestrial digital signal (Channnel is in the last.)	MAIN		
IND	***	Switching the satellite digital signal, direct tuning (***: channel number)	MAIN		
		Switching the satellite digital signal (Channnel is in the last.)	MAIN		
INH		Switching the Home Media Gallery / Home Gallery			
INP	S01	Input: INPUT1	MAIN		
	S02	Input: INPUT2	MAIN		
	S03	Input: INPUT3	MAIN		
	S04	Input: INPUT4	MAIN		
	S05	Input: INPUT5	MAIN		
	S06	Input: INPUT6 (PC)	MAIN		
M					
MRM	S00	Setting the mode to normal operation	MAIN	●	
	S01	Setting the mode to standalone operation	MAIN	●	
MST	S00	Display one screen			
	S01	PsideP (Main size: normal)			
	S02	PinP (Right down)			
	S03	PinP (Right up)			
	S04	PinP (Left down)			
	S05	PinP (Left up)			
	S08	SWAP (Exchanging sub-screen)			
O					
OSD	S00	OSD setting: OFF	MAIN		
	S01	OSD setting: ON	MAIN		
P					
POF		Power: OFF	MAIN		
PON		Power: ON	MAIN		
PUC	S00	PURE CINEMA: OFF	MAIN	●	
	S01	PURE CINEMA: Standard	MAIN	●	
	S02	PURE CINEMA: Advance	MAIN	●	
	S03	PURE CINEMA: Smooth	MAIN	●	
Q					
QMT		Acquiring temperature of MTB/MR side and Fan speed			
QNG		Acquiring shutdown information of MTB/MR side			
QS1		Acquiring unit data, such as the software version			
QSE		Acquiring unit data, such as the software version of MTB/MR side (specific destination)			

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Command Name		Function	Last Memory	Effective only in Factory mode	Remarks
S					
SDF	S00	SRS DEFINITION: OFF			
	S01	SRS DEFINITION: DEFINITION1			
	S02	SRS DEFINITION: DEFINITION2			
	S03	SRS DEFINITION: DEFINITION3			
SML	***	Adjustment of the side mask level	MAIN	●	
SRS	S00	SRS: OFF			
	S01	SRS: SRS1			
	S02	SRS: SRS2			
	S03	SRS: SRS3			
SZM	S00	Setting the screen size to Dot by Dot	MAIN		
	S01	Setting the screen size to 4 :3	MAIN		
	S02	Setting the screen size to FULL or FULL 1080i	MAIN		
	S03	Setting the screen size to ZOOM	MAIN		
	S04	Setting the screen size to CINEMA	MAIN		
	S05	Setting the screen size to WIDE or WIDE1	MAIN		
	S06	Setting the screen size to FULL 14:9	MAIN		
	S07	Setting the screen size to CINEMA 14:9	MAIN		
	S11	Setting the screen size to AUTO	MAIN		
	S12	Setting the screen size to WIDE2	MAIN		
T					
TBS	S00	TRUBASS: OFF			
	S01	TRUBASS: TRUBASS1			
	S02	TRUBASS: TRUBASS2			
	S03	TRUBASS: TRUBASS3			
U					
UP*		To add * to the adjustment value (* = 0 to 9, add 10 with UP0 and set to maximum value with UPF)			
V					
VOL	UP*, DW*, ***	To adjust the volume			Use this command by designating the adjustment value *** (=000 to 060).
Z					
ZME	***	Initializing the video EEPROM data of the MTB/MR side		●	

[2] QSE (DESTINATION PECULIAR INFORMATION)

Induce it peculiar, individual information is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QSE]	Every time	Output of status	Return data: 3 (ECO) + 32 (DATA) + 2 (CS) = 37 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QSE
1	Check flag for production	1 byte	E
2	Reserved	3 byte	***
3	DTB hardware version	4 byte	0342
4	User setting password	4 byte	1234
5	DP Tx firmware version	16 byte	123456789ABCDEFGH
6	DP Tx hardware version	4 byte	ABCD
CS	Check Sum	2 byte	13

[3] QMT (STATUS INFORMATION OF MTB/MR SECTION)

Temperature information on the MTB/MR section is acquired.

Command Format	Effective Operation Modes	Function	Remarks
[QMT]	Every time	Output of status	Return data: 3 (ECO) + 8 (DATA) = 11 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QMT
1	A/D value of temperature of MTB/MR section	3 byte	276
2	Reserved (*1)	1 byte	1
3	Reserved	4 byte	****

*1 Although the numerics 0, 1, and 2 can be input, those input values are invalid.

[4] QNG (SHUTDOWN INFORMATION OF MTB SECTION)

The command QNG is for acquiring the data from the 8 latest shutdown (SD) logs of the MTB section.

Command Format	Effective Operation Modes	Function	Remarks
[QNG]	Every time	To acquire data on the shutdown (NG) logs of MTB side	Return data: 3 (ECO) + 96 (DATA) + 2 (CS) = 101 Byte

Data Arrangement		Data Length	Output Example
ECO		3 byte	QNG
1	Latest SD data	1 byte	1
2	Latest SD subcategory data	1 byte	0
3	Data from the MTB hour meter for the latest SD	7 byte	0752013
4	Reserved	3 byte	000 fixed
5	Second latest SD data	1 byte	5
6	Second latest SD subcategory data	1 byte	1
7	Data from the MTB hour meter for the second latest SD	7 byte	0495204
8	Reserved	3 byte	000 fixed
9	Third latest SD data	1 byte	A
10	Third latest SD subcategory data	1 byte	2
11	Data from the MTB hour meter for the third latest SD	7 byte	0365814
12	Reserved	3 byte	000 fixed
13	Fourth latest SD data	1 byte	5
14	Fourth latest SD subcategory data	1 byte	0
15	Data from the MTB hour meter for the fourth latest SD	7 byte	0256612
16	Reserved	3 byte	000 fixed
17	Fifth latest SD data	1 byte	7
18	Fifth latest SD subcategory data	1 byte	2
19	Data from the MTB hour meter for the fifth latest SD	7 byte	0105628
20	Reserved	3 byte	000 fixed
21	Sixth latest SD data	1 byte	B
22	Sixth latest SD subcategory data	1 byte	0
23	Data from the MTB hour meter for the sixth latest SD	7 byte	0003009
24	Reserved	3 byte	000 fixed
25	Seventh latest SD data	1 byte	C
26	Seventh latest SD subcategory data	1 byte	1
27	Data from the MTB hour meter for the seventh latest SD	7 byte	00002A9
28	Reserved	3 byte	000 fixed
29	Eighth latest SD data	1 byte	C
30	Eighth latest SD subcategory data	1 byte	4
31	Data from the MTB hour meter for the eighth latest SD	7 byte	0000012
32	Reserved	3 byte	000 fixed
CS	2 Byte	2 Byte	7D

A

< SD Information No. >

Frequency *	Shutdown Factor	Remarks (Operation)
1	Failure of Power Supply of VCC	Immediately Shutdown
5	Abnormality in MSP	Go to No. 5 Subcategory Information
6	Failure of communication with Module microcomputer	Immediately Shutdown
7	Failure in 3-wire serial communication of Main microcomputer	Go to No. 7 Subcategory Information
8	Failure in IIC communication of Main microcomputer	Go to No. 8 Subcategory Information
9	Failure in Communication of Main microcomputer	Immediately Shutdown
10(A)	Abnormality in FAN	Go to No. 10 Subcategory Information
11(B)	Abnormality in high temperature	Immediately Shutdown
12(C)	Failure in Digital Tuner	Go to No. 12 Subcategory Information
13(D)	Failure in Power Supply at MTB section	Go to No. 13 Subcategory Information
15(F)	Failure in Main EEPROM	Immediately Shutdown

B

*: Indicates the frequency of Blue LED flashing when the shutdown is occurred.

C

< No. 5 Subcategory Information on "Shutdown signal from D-Amp./short-circuit of speaker terminal" >

Value	Shutdown Factor	Remarks (Operation)
3	MSPMAP	Immediately Shutdown

< No. 7 Subcategory Information on "Failure in 3-wire serial communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Communication error of IF microcomputer	Immediately Shutdown
2	Communication error of ARIA	Immediately Shutdown

D

< No. 8 Subcategory Information on "Failure in IIC communication of Main microcomputer" >

Value	Shutdown Factor	Remarks (Operation)
1	Tuner 1	Immediately Shutdown
2	MSP/MAP	Immediately Shutdown
3	AV-Switch	Immediately Shutdown
4	RGB-Switch	Immediately Shutdown
5	Main VDEC	Immediately Shutdown
6	VDEC-SDRAM	Immediately Shutdown
7	AD/PLL	Immediately Shutdown
8	HDMI	Immediately Shutdown
9	DisplayPortTx	Immediately Shutdown
B	US-MAP	Immediately Shutdown
C	GCR	Immediately Shutdown
D	COFDM	Immediately Shutdown

E

< No. 10 Subcategory Information on "Abnormally in FAN" >

Value	Shutdown Factor	Remarks (Operation)
1	FAN 1	Immediately Shutdown
2	FAN 2	Immediately Shutdown

< No. 12 Subcategory Information on "Failure in Digital Tuner" >

Value	Shutdown Factor	Remarks (Operation)
1	Starting error of the digital tuner	Communication stop
2	Communication error with the digital tuner	
3	DTB device error	
4	Abnormally in BCM7038	
5	Fugue	
6	Audio Chip	
7	Tuner 1/Tuner 1 or 2	
8	Card I/F IC	
9	VBI Slicer	
B	Flash	
C	EEPROM	
D	EEPROM	
F	DTV Antenna	
G	Home Gallery	
I	Application	
J	DEMODO(US)/COFDM(EU)	
K	Tuner 2	
L	S2DEMOD	
M	LNB	
O	DTB ERROR	
P	Abnormally in DTB (S2) antenna	

F

< No. 13 Subcategory Information on "Failure in Power supply at MTB section" >

Value	Shutdown Factor	Remarks (Operation)
1	RST 2	Immediately Shutdown
2	RST 4	Immediately Shutdown

[5] FAY/FAN (ADJUSTMENT COMMANDS PERMISSION/PROHIBITION)

The commands FAY/FAN are for prohibiting/permitting panel/MTB-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjustment command is valid.	For details, refer to the section "6.1 [3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE".
[FAN]	During FAY	Adjustment command is invalid.	

1234

6. SERVICE FACTORY MODE

6.1 DETAILS OF THE SERVICE FACTORY MENU

A

Operations during Service Factory mode are described here.

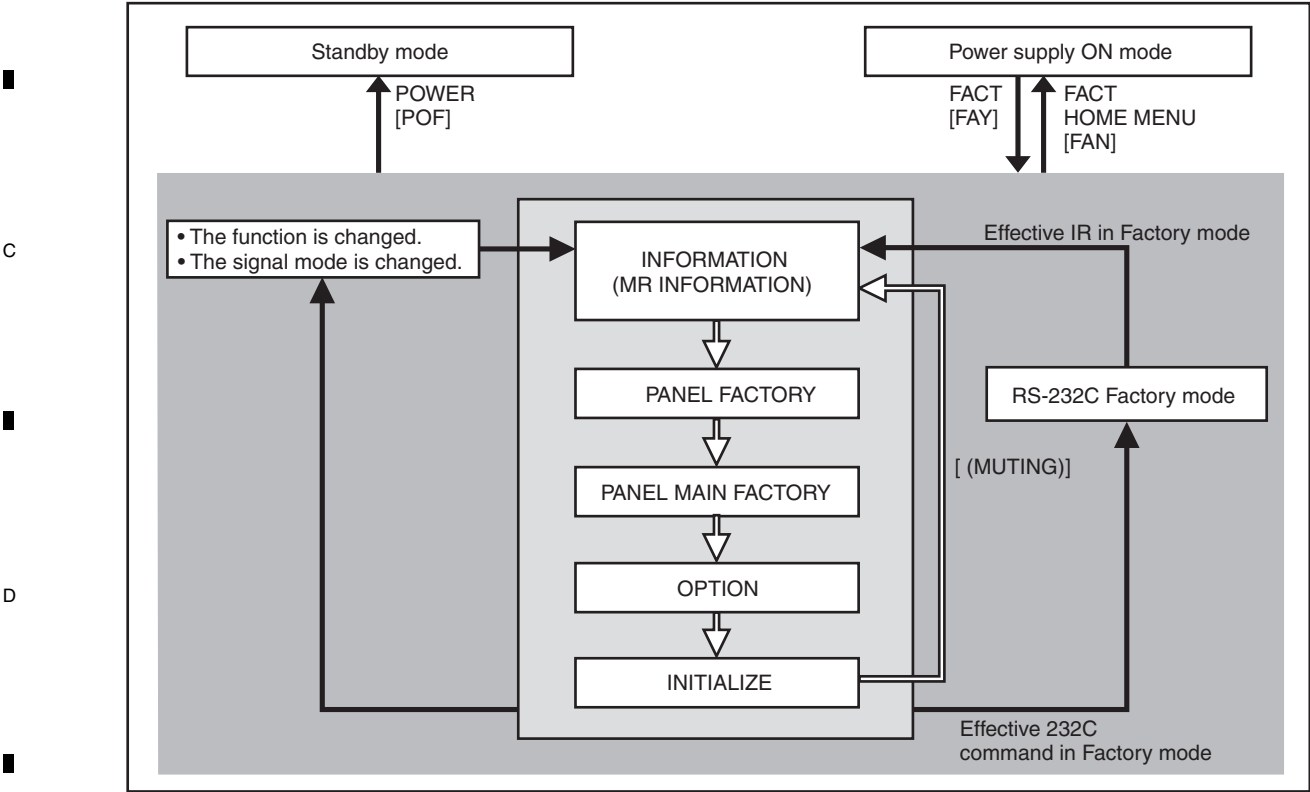
Before entering Factory mode of the PDP, make sure that the "HD AV Converter" setting on the PDP menu is set to "Disable." If it is set to "Enable," change it to "Disable" then enter Factory mode.

To confirm the "HD AV Converter" setting on the PDP menu, proceed as follows:
Select HOME MENU, Option, then HD AV Converter in HDMI Control Setting.

Note: If "HD AV Converter" is set to "Enable," the video/audio signals will not be displayed/output even if external equipment is connected via input connectors other than INPUT 4 of the PDP.

B

[1] SERVICE FACTORY MODE TRANSITION CHART



E

[2] HOW TO ENTER/EXIT SERVICE FACTORY MODE

- **How to enter Service Factory Mode**
By using a PDP service remote control)
• PDP service remote control : Press [FACTORY] key.
By issuing RS-232C commands)
• During normal Standby mode : Issue [PON] then [FAY].
• During normal operation mode : Issue [FAY].
- **How to enter Service Factory Mode by Using the supplied Remote Control Unit**
• From this model, can not enter the Service Factory Mode by operating the supplied remote control unit keys.
- **How to exit Service Factory Mode**
By using a PDP service remote control)
• PDP service remote control : press [FACTORY] key.
• Supplied remote control unit : press [HOME MENU] key.
By issuing RS-232C commands)
• Issue [FAN].
- F

[3] FUNCTIONS WHEN ENTERING THE SERVICE FACTORY MODE

■ Functions whose setting are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the "FAY" command is received) :

Function	Remarks
2-Screen Operation	Input function set on the main side is selected.
FREEZE	
Auto size, Side Mask	It is not performed during Factory mode.
ORBITER, Mask control	Central value operation (ORBITER)
Sleep Timer	Cancel the operation.
Room light sensor	Turn off the detecting operation (Setting data will be retained.)
Blue LED dimmer	Turn off the operation (Setting data will be retained.)
Setting of Parental Control	When this is turned off, the block of the screen is released.
Power Control	Turn off the operation (However, the setting maintains it.)
Image Position	Central value operation

Note: Enter the factory after cancelling ACI because the ACI operation setting OFF and not done.

■ User data

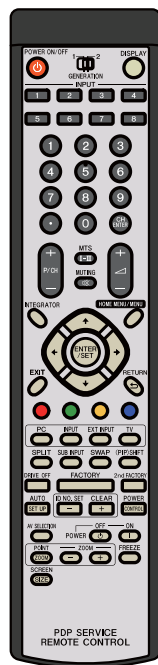
User data will be treated as follows :

- User data on picture-quality and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- User-setting data will be applied to the various settings (items on the menus), signal formats, and the items that are associated with path change (HDMI settings, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size). Are reset to the default values (data stored in memory will be retained).
Screen size will be retained.

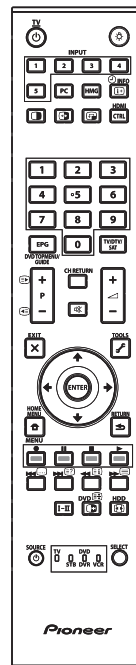
[4] REMOTE CONTROL CODE IN SERVICE FACTORY MODE

Remote Control Keys	Basic Functions	Remarks
MUTING	Switching the main items.	Shifting to the next main item (top).
↓ (DOWN)	Switching the subtitled items.	Shifting downward to the next subtitled item.
↑ (UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
← (LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→ (RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1 to 5)
CH+/P+	Increasing the channel number.	
CH-/P-	Decreasing the channel number.	
Numeric Keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF.	Turning the power off.
FACTORY	Factory OFF (Factory mode)	In Factory mode, turning Factory mode off.
	Factory ON (Non-Factory mode).	In Non-Factory mode, turn Factory mode on.
HOME MENU	Menu ON.	In Factory mode, turn Factory mode off.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Decreasing 10 the adjustment value. (PANEL FACTORY)
DRIVE OFF (Note1)	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR	INTEGRATOR MENU ON.	Enter INTEGRATOR MODE.

(Note 1) When ten seconds have passed since the [DRIVE OFF] key was pressed at the standby, it becomes invalid.
Please press [POWER] key from the [DRIVE OFF] key pressing within ten seconds when you do power supply ON while driven OFF.



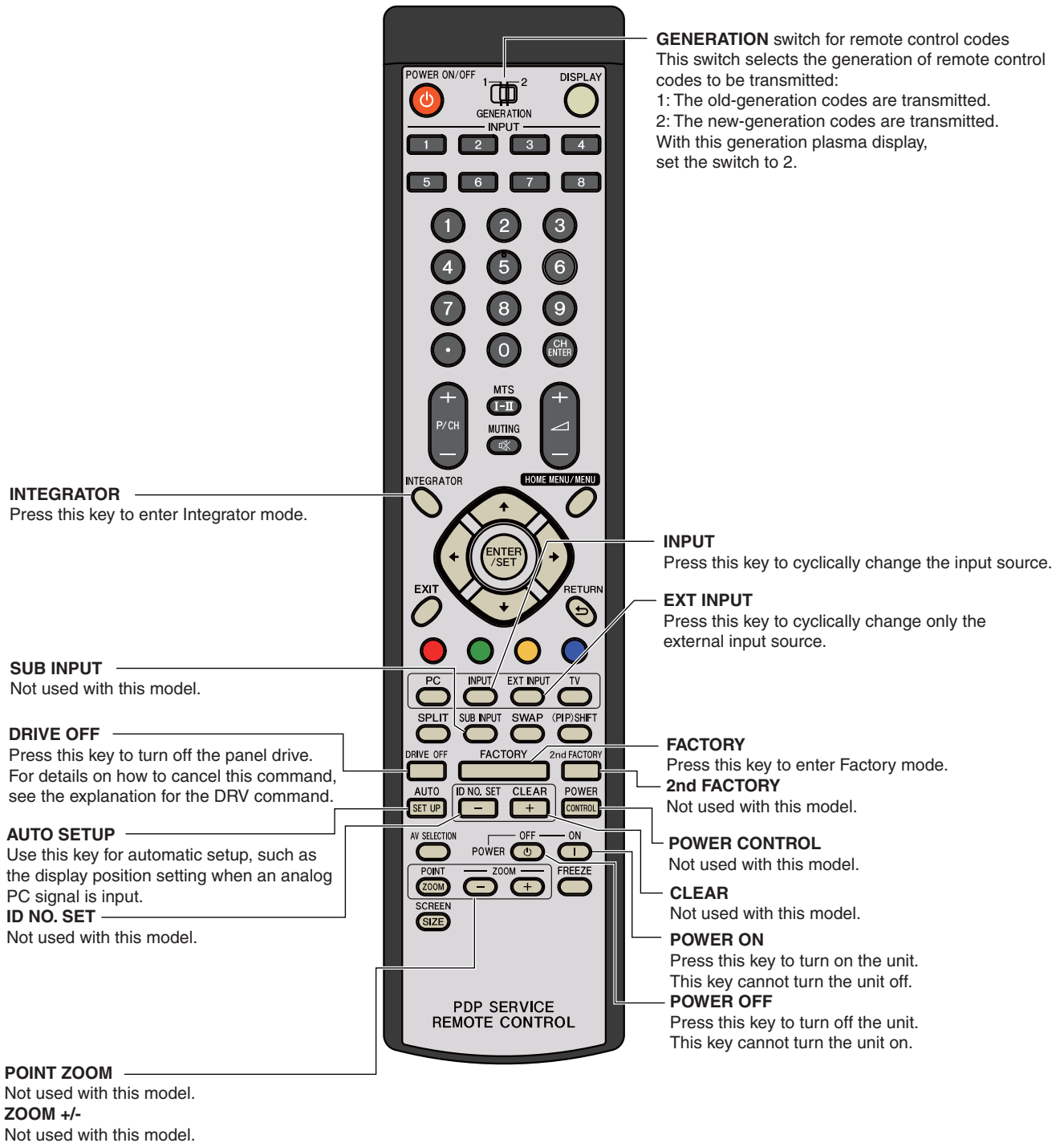
PDP service
remote control



Supplied
remote control

[5] PDP SERVICE REMOTE CONTROL

- The keys labeled with the same names on the service remote control unit have the same functions as those of the supplied remote control unit. (See "2.3 PANEL FACILITIES.")
- For the keys not provided on the supplied remote control unit, see the explanations below:



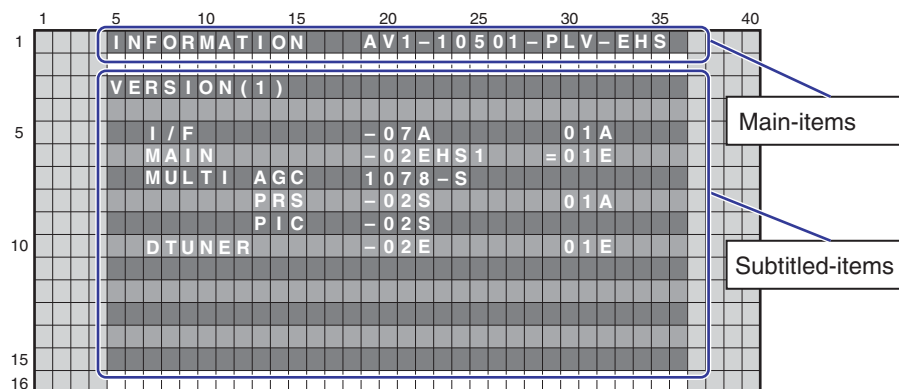
[6] FACTORY HIERARCHICAL TABLE

Large Item			Variable / Adjustment Range	Remarks
	Middle Item			
		Small Item		
6.2 [1] INFORMATION				
	[1-1] VERSION (1)			
	[1-2] VERSION (2)			
	[1-3] VERSION (3)			
	[1-4] MAIN NG	CLEAR <=>	NO <=> YES	
	[1-5] TEMPERATURE			
	[1-6] HOUR METER	CLEAR <=>	NO <=> YES	
	[1-7] HDMI SIGNAL INFO 1			
	[1-8] HDMI SIGNAL INFO 2			
	[1-9] VDEC SIGNAL INFO 1			
	[1-10] VDEC SIGNAL INFO 2			
6.2 [2] PANEL FACTORY (+) (*2)				
	[2-1] PANEL INFORMATION			
	[2-2] PANEL WORKS			
	[2-3] POWER DOWN			
	[2-4] SHUT DOWN			
	[2-5] PANEL-1 ADJ (+)			
	[2-6] PANEL-2 ADJ (+)			
	[2-7] PANEL FUNCTION (+)			
	[2-8] ETC (+)			
	[2-9] RASTER MASK SETUP (+)			
	[2-10] PATTERN MASK SETUP (+)			
	[2-11] COMBI MASK SETUP (+)			
6.2 [3] PANEL MAIN FACTORY (+) (*2)				
	[3-1] PM NG INFO			
	[3-2] PM STATE INFO			
	[3-3] DP_RX INFO			
	[3-4] PM_SETUP (+)			
6.2 [4] OPTION				
	[4-1] CH PRESET <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-2] Digital AFT <=>		DISABLE <=> ENABLE	Exclusively used for production line
	[4-3] SYNC DET (+)			for the technical analysis
	[4-4] CTI (+)			for the technical analysis
6.2 [5] INITIALIZE				
	[5-1] SIDE MASK LEVEL (+)	SIDE MASK LEVEL <=>		
	[5-2] FINAL SETUP	DATA RESET <=>	NO <=> YES	
	[5-3] DTB SERVICE MODE	MODE SHIFT <=>	NO <=> YES	for the technical analysis (*1)
	[5-4] Wide XGA AUTO <=>		DISABLE <=> ENABLE	for the technical analysis
	[5-5] AUTO ADJUST. <=>	AUTO ADJUST. <=>	NO <=> YES	

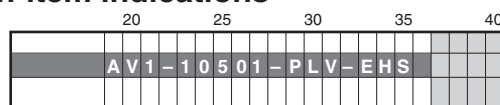
(*1): Exit the Service Factory Menu and enter the Digital Tuner Service menu.

(*2): For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

[7] INDICATIONS IN SERVICE FACTORY MODE



Main-item indications



① Input function

Input Functions	OSD
AV 1 to 5	AV 1 to 5
Terrestrial Wave (Analog)	AIR
Terrestrial Wave (Digital)	ARD
Satellite digital broadcasting	SAT
Cable (Digital)	CBD
Home Media Gallery	HMG
PC	PC

② SIG mode and Screen size

Note: See SIG-Mode Tables. (See next page.)

③ Color system and Signal type

Color System and Signal Type	OSD	
	At Composite Input	At S-connector Input
NTSC	NTV	NTS
PAL	PLV	PLS
PAL M	PMV	PMS
PAL N	PNV	PNS
PAL 60	P6V	P6S
SECAM	SCV	SCS
4.43 NTSC	4NV	4NS
BLACK/WHITE	BWV	BWS
Y/CB/CR	CBR	
Y/PB/PR	PBR	
RGB	RGB	
Digital Video signal	DIG	

④ Option (Destination, Panel Generation, etc.)

Options	OSD
KRP-500P/WYSIXK5	EHS
KRP-600P/WYSIXK5	

A

② SIG Mode and Screen size (by User is displayed)

1st and 2nd characters : Resolution of the input signal

3rd and 4th characters : Refresh rate of the input signal

5th character : Selection of the screen size

B

■ Input signal mode table for video signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
10	50	SDTV*625i	50.000	15.750
	60	SDTV*525i	60.000	15.750
20	50	SDTV*625p	50.000	31.500
	60	SDTV*525p	60.000	31.500
30	50	HDTV*1125i	50.000	33.750
	60	HDTV*1125i	60.000	33.750
40	50	HDTV*750p	50.000	45.000
	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000
	50	HDTV*1125p	50.000	56.250
	60	HDTV*1125p	60.000	67.500

Fv: Vertical Frequency, Fh: Horizontal Frequency

C

■ Input signal mode table for PC signals (resolutions and V frequencies)

1st to 4th Character		Signal Type	Fv (Hz)	Fh (kHz)
C1	70	720 x 400	70.087	31.469
C2	60	640 x 480	59.940	31.469
C4	60	800 x 600	60.317	37.879
C6	60	1280 x 720	60.000	44.800
C7	60	1024 x 768	60.004	48.363
C9	60	1360 x 768	60.015	47.712
D6	60	1280 x 1024	60.000	64.000

Fv: Vertical Frequency, Fh: Horizontal Frequency

D

■ Current selection of the screen size

5th Character	GUI Notation	VIDEO	PC	Remarks
0	DOT BY DOT	●	—	
1	4:3	●	●	
2	FULL	●	●	
3	ZOOM	●	—	
4	CINEMA	●	—	
5	WIDE	●	—	
6	FULL 14:9	●	—	
7	CINEMA 14:9	●	—	
9	WIDE1	●	—	
A	WIDE2	●	—	

●: supported, —: unsupported

F

6.2 DETAILS OF THE FACTORY MENU

[1] INFORMATION

■ Operation items

No.	Function	Content	RS-232C Command
[1-1]	VERSION (1)	The Flash memory versions for each device are displayed.	QS1
[1-2]	VERSION (2)	The Flash memory versions for each device are displayed.	QSE
[1-3]	VERSION (3)	The Flash memory versions for each device are displayed.	QSB
[1-4]	MAIN NG	The Shutdown NG information and Event Times in the MTB section are displayed.	QNG
[1-5]	TEMPERATURE	The present temperature and the FAN rotating status are displayed.	—
[1-6]	HOURLY METER	The accumulation power ON count of the panel is displayed.	—
[1-7]	HDMI SIGNAL INFO 1	The status registers of HDMI receiver are displayed with hexadecimal.	—
[1-8]	HDMI SIGNAL INFO 2		
[1-9]	VDEC SIGNAL INFO 1	Display the signal information input to VDEC.	—
[1-10]	VDEC SIGNAL INFO 2		

[1-1] VERSION (1)

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
I/F	I/F microcomputer	-07A	01A
MAIN	Main microcomputer	-02EHS1	=01E
MULTI AGC	AGC data of Multi processor	1078-S	
MULTI PRS	Program of Multi processor	-02S	01A
MULTI PIC	Picture quality data of Multi processor	-02S	
DTUNER	Software program of the Digital tuner	-02E	01E

[1-2] VERSION (2)

1	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Display Item	Meaning	Display Example
DTB HARD	DTB Hardware Version	0342
PASSWORD	User setting password	1234
DP TX	DP TX Firmware Version	123456789ABCDEFG
DP TX HARD	DP TX Hardware Version	2C13

[1-3] VERSION (3)

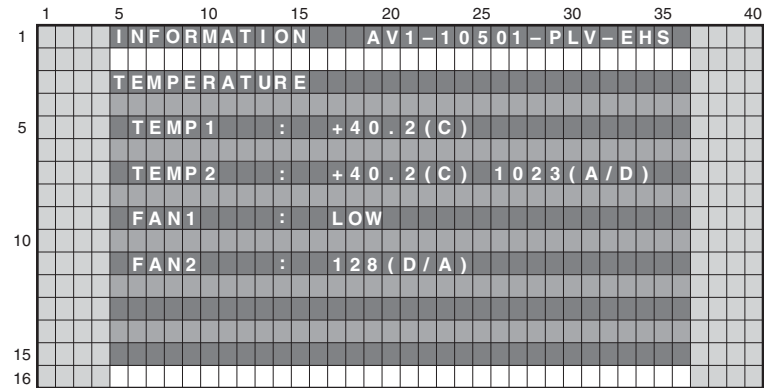
1	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Display Item	Meaning	Display Example (Program)	Display Example (Boot)
P_MAIN	Panel Main microcomputer	-02AS	01A
MODULE	Module microcomputer	-06A	01A
SEQ PRS	Program of the sequence processor	-03Y	01A
Display Item	Meaning	Display Example	
DP RX	DP RX Firmware Version	123456789ABCDEFG	
DP RX HARD	DP RX Hardware Version	2C12	
Display Item	Meaning		
PANEL INFO	It displays the generation of the panel, inchage and the type of the panel.		

[1-5] TEMPERATURE

A present temperature and the FAN rotation are displayed.

If either [←] key or [→] key is pressed, the display data is refreshed.



Display Item	Meaning
TEMP1	The temperature of the sensor on the panel side is displayed by the Centigrade (C).
TEMP2	The temperature conversion display is done with 10 bit the A/D input value of IF microcomputer. It is displayed by both the Centigrade (C) and 8 bit A/D value. Note: When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.
FAN1	Although STOP, LOW, or HIGH may be displayed, they are meaningless. Ignore those displays.
FAN2	The value of the rotation state of FAN is displayed. During a rotation of FAN, 8bit D/A value output from IF microcomputer is displayed. It is displayed with OFF during a stop.

[1-6] HOUR METER

	1			5				10					15					20					25					30					35					40		
1																																								
5																																								
10																																								
15																																								
16																																								

Display Item	Meaning	Display Example
PANEL	HOUR METER of the panel	00151H 21M
P-COUNT	Accumulation power ON count of the panel	00000095 TIMES
SERIAL	Serial number of the Display (panel)	ABCDEFGHIJKLMNO

• MTB HOUR METER

In HOUR METER screen on Factory Menu, press the [ENTER/SET] key, and then it moves to the screen to clear MTB HOUR METER. (MTB HOUR METER is cleared only.)

	1		5		10		15		20		25		30		35		40	
1			INFORMATION							AV1-10501-PLV-EHS								
			MTB HOUR METER															
5																		
10																		
15			CLEAR <=>							: NO								
16																		

Operation:

- Even if [←] key or [→] key is pressed, {CLEAR <=> :YES} ↔ {CLEAR <=> :NO} is repeated.
- Selecting <NO> then pressing the ENTER/SET key will return the screen to the next higher layer, without doing anything.
- Selecting <YES> then holding the ENTER/SET key pressed for 5 seconds will clear the HOUR METER (HOUR METER while the MAIN NG screen is displayed) data that are managed in MTB then return the screen to the next higher layer.

[1-7] HDMI SIGNAL INFO 1

	1	5	10	15	20	25	30	35	40
1									
5									
10									
15									
16									

Displays the input signal information of HDMI terminal

Display Item	Meaning
PWR5V	+5 V power detection (18 pin of HDMI terminal)
VSYNC	VSYNC detection
CKDT	Clock detection
SCDT	SYNC detection
DCRPT	HDCP decryption status
AUTH	HDCP authentication status
MODE	HDMI mode status
BIST	HDCP Key status (Always display it with "--".)
NVAL	N value
CTSVAL	CTS value
AKSV	Shadow AKSV value
BKSV	Shadow BKSV value
IT CNT	IT content (AVI info)
EXTCOL	Extension colorimetry (AVI info)
RGB QR	RGB range (AVI info)
PIXDEP	Number of pixel/bit

[1-8] HDMI SIGNAL INFO 2

1	5	10	15	20	25	30	35	40
1								
5								
10								
15								
16								

Displays input signal status of HDMI terminal

Display Item	Meaning
H RES	Number of horizontal pixels
V RES	Number of vertical lines
H DE	Number of effectively horizontal pixels
V DE	Number of effectively vertical lines
INTRL	Interlace (=INT) or progressive (=PRG)
V POL	VSYSN polarity
H POL	HSYSN polarity
AUDIO (first line)	Sampling frequency. (ex. DVD: 48kHz, CD: 44.1kHz) *1
AUDIO (second line)	Audio format PCM (PCM) or No PCM (no PCM)
AUDIO (third line)	Quantization bit
COL SP	Color space (AVI Info) 422 or 444 or RGB *2
COLMET	Colorimetry (AVI Info)
ASPECT	Aspect (AVI Info)
ACTIVE	Active format (AVI Info)
V FMT	Video format (AVI Info)
PIX RP	Pixel count
SOURCE (first line)	Vendor name of the emission device
SOURCE (second line)	Model name of the emission device

*1: Confirm if this item is displayed when the audio is not outputted.

*2: If may not match to the state of emission devices when the color is abnormal.

Display of HDMI FACTORY and correspondence of resolution

Please confirm the following items when the picture doesn't come out.

Input Signal	FACTORY Display				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)@60	858	262 or 263	720	240	720x480i@60
480p (525p)@60	858	525	720	480	720x480p@60
1080i (1125i)@60	2200	562 or 563	1920	540	1920x1080i@60
720p (750p)@60	1650	750	1280	720	1280x720p@60
1080p (1125p)@60	2200	1125	1920	1080	1920x1080p@60
1080p (1125p)@24	2750	1125	1920	1080	1920x1080p@24
576i (625i)@50	864	312 or 313	720	288	720x576i@50
576p (625p)@50	864	625	720	576	720x576p@50
1080i (1125i)@50	2640	562 or 563	1920	540	1920x1080i@50
720p (750p)@50	1980	750	1280	720	1280x720p@50
1080p (1125p)@50	2640	1125	1920	1080	1920x1080p@50

A

B

C

D

E

F

A [2] PANEL FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[2-1]	PANEL INFORMATION	_____	_____
[2-2]	PANEL WORKS	_____	_____
[2-3]	POWER DOWN	_____	_____
[2-4]	SHUT DOWN	_____	_____
[2-5]	PANEL-1 ADJ (+)	_____	_____
[2-6]	PANEL-2 ADJ (+)	_____	_____
[2-7]	PANEL FUNCTION (+)	_____	_____
[2-8]	ETC. (+)	_____	_____
[2-9]	RASTER MASK SETUP (+)	_____	_____
[2-10]	PATTERN MASK SETUP (+)	_____	_____
[2-11]	COMBI MASK SETUP (+)	_____	_____

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

C [3] PANEL MAIN FACTORY (+)

■ Operation Items

No.	Function	Content	RS-232C
[3-1]	PM NG INFO	_____	_____
[3-2]	PM STATE INFO	_____	_____
[3-3]	DP_RX INFO	_____	_____
[3-4]	PM_SETUP (+)	_____	_____

Note: For details on the setting items, refer to the Service manual of the PLASMA DISPLAY (KRP-600P, KRP-500P).

D [4] OPTION

Operation item

No.	Function	Content	RS-232C
[4-1]	CH PRESET <=>	Set the channel map for production line	SCP
[4-2]	Digital AFT <=>	Set AFT of the Satellite digital broadcasting	AFT
[4-3]	SYNC DET (+)	Set the synchronized signal detection of VDEC	_____
[4-4]	CTI (+)	Set the synchronized signal detection of VDEC	_____

E [4-1] CH PRESET <=>

Exclusively used for production line.

[4-2] Digital AFT <=>

Exclusively used for production line.

[4-3] SYNC DET (+)

Exclusively used for technical analysis (details omitted).

F [4-4] CTI (+)

Exclusively used for technical analysis (details omitted).

[5] INITIALIZE

Operation item

No.	Function	Content	RS-232C
[5-1]	SIDE MASK LEVEL (+)	Configure the color of the side mask.	SML
[5-2]	FINAL SETUP	Initialize flash memories on virgin product status	FST
[5-3]	DTB SERVICE MODE	Enter the Digital Tuner Service Menu	----
[5-4]	Wide XGA AUTO <=>	Exclusively used for technical analysis.	----
[5-5]	AUTO ADJUST. <=>	Perform the auto-adjustment setting process	----

[5-1] SIDE MASK LEVEL (+)

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5								
10								
15	SIDE MASK LEVEL (+)							
16								

To configure sidemask level (To adjust the values, input signal is required).

Display Item	Content	RS-232C
SIDE MASK LEVEL <=>	Adjust Side Mask level (Adjustable range: 000 to 255, Initial value: 115)	SML

Note: In this mode (SIDE MASK LEVEL), adjustment value cannot be changed with the VOLUME +/- keys.

[5-2] FINAL SETUP

1	5	10	15	20	25	30	35	40
1	INITIALIZE	AV1-10501-PLV-EHS						
5	FINAL SETUP							
10								
15	DATA RESET <=>	: NO						
16								

- To reset each memory value to factory default values. Factory command is "FST".
- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to the previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the AC cable after FINAL SETUP.
When replacing the MAIN BLOCK Assy, the FINAL SETUP is required.

A

[5-3] DTB SERVICE MODE

	1	5	10	15	20	25	30	35	40
1			INITIALIZE			AV1-10501-DIG-EHS			
			DTB SERVICE MODE						
5									
10									
15			MODE SHIFT <=>				:YES		
16									

If the [ENTER/SET] key is kept on pressing for 5 second when the status of this menu is <YES>, shift to the DTB SERVICE mode screen. (Release from the SERVICE FACTORY mode.)

[5-4] WIDE XGA AUTO <=>

Exclusively used for technical analysis (details omitted).

C

[5-5] AUTO ADJUST. <=>

	1	5	10	15	20	25	30	35	40	
1		INITIALIZE				AV1-10501-PLV-EHS				
5										
10										
15		AUTO ADJUST. <=>				:YES				
16										

- When the configuration is set to <NO> and the [ENTER/SET] key is pressed, no action is taken and the menu returns to previous screen.
- When the configuration is set to <YES> and the [ENTER/SET] key is pressed for 5 seconds, the auto-adjustment action executes.

E

- Be sure to power off with the remote control unit or disconnect and connect the AC cable after the auto-adjustment is completed.
- When some ICs on the MAIN BLOCK Assy are replaced individually, auto-adjustment is required. For details on IC numbers, see the list “■ Parts whose replacement is difficult” in “8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED.”
- When this unit is used with the HD AV Converter, the interlocking setting with the HD AV Converter is released. Reset it after the auto adjustment is completed.

F

6.3 DIGITAL TUNER SERVICE MENU

The Digital Tuner Service Menu is provided for collecting data for technological examination when the Digital Tuner has any problem in the market. This menu is introduced here just for reference.

[1] REMOTE CONTROL CODE IN DIGITAL TUNER SERVICE MENU

The following remote control cord is valid in the Digital Tuner Service Menu.

Remote Control Keys	Basic Functions	Remarks
↓ (DOWN)	Selecting the menu items and shifting the pages.	Shifting downward to the next item. Moving to the next lower page.
↑ (UP)		Shifting upward to the next item. Moving to the next upper page.
← (LEFT)	Selecting the setting value.	Modifying the setting of selected items.
→ (RIGHT)		
ENTER/SET	Shifting the menu layers	Shifting to the next menu screen.
RETURN		Shifting to the previous menu screen.
Numeric Keys	Numeric input	Input the numerical value.
POWER OFF	Power OFF	Turning the power off.
STANDBY/ON		
FACTORY	Factory ON/OFF	Release the Menu, then enter the Service Factory menu.
EXIT	MENU exit	After you exit the menu, the channel that was selected on the menu will be displayed.
MUTING	Muting	
HOME MENU	HOME MENU ON/OFF	

[2] HIERARCHICAL TABLE OF DIGITAL TUNER SERVICE MENU

Item	Remarks	
	Large Item	Middle Item
6.3 [3]	Digital Tuner Service Menu	
6.3 [4]	HMG Service Menu	
		Exclusively used for technical analysis: HomeMediaGallery-related information indication
6.3 [5]	Digital	
	Bandwidth	Exclusively used for technical analysis
	Frequency	Exclusively used for technical analysis
	Program Number	Exclusively used for technical analysis
	Audio PID	Exclusively used for technical analysis
	DTV Tuning Status	Exclusively used for technical analysis: Terrestrial digital broadcasting-related information indication
6.3 [6]	Satellite	
	Modulation	Exclusively used for technical analysis
	Frequency	Exclusively used for technical analysis
	Symbol Rate	Exclusively used for technical analysis
	LNB POWER	Exclusively used for technical analysis
	LNB BAND	Exclusively used for technical analysis
	Program Number	Exclusively used for technical analysis
	Audio PID	Exclusively used for technical analysis
	SAT Tuning Status	Exclusively used for technical analysis: Satellite digital broadcasting-related information indication
6.3 [7]	Software Version	
		Exclusively used for technical analysis: The software revision information that consists of it in DTB software

[3] DIGITAL TUNER SERVICE MENU SCREEN

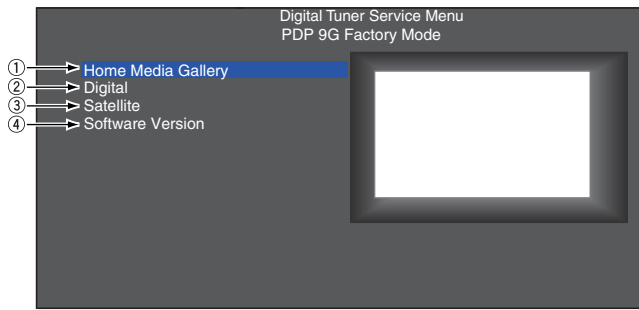


Fig.1 Digital Tuner Service Menu screen

Display a large item list of Digital Tuner Service Menu.
Select each item, and shift to each setting / information display screen.

- ① Home Media Gallery-related information indication
- ② Terrestrial digital-related setting / information indication
- ③ Satellite digital-related setting / information indication
- ④ Digital Tuner-related detailed software version indication

[4] HOME MEDIA GALLERY SCREEN

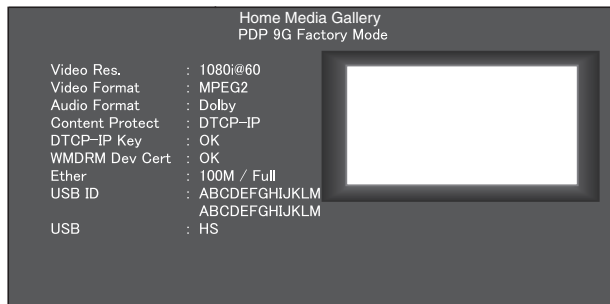


Fig.2 Home Media Gallery screen

Display the Home Media Gallery-related information.

[5] DIGITAL SCREEN

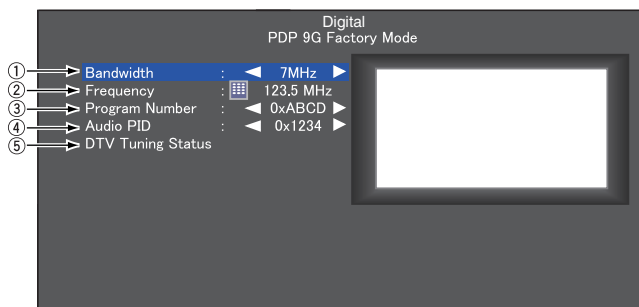


Fig.3 Digital screen

Display the Digital broadcasting-related setting / information indication.(except the satellite digital)

- ① The Bandwidth for receiving a digital broadcast can be selected. (7 MHz/8 MHz)
- ② The frequency can be set (up to 1 digit after the decimal point).
- ③ Program Number in the same stream: Service ID can be selected.
- ④ Audio PID in the same stream: Audio PID can be selected.
- ⑤ The DTV Tuning Status is displayed.

The data displayed on the DTV Tuning Status screen are as shown below:

The instructions for servicing using this screen is shown in "How to confirm the DTV Tuning Status on the Digital Tuner Service Menu" of section 5.2 [4]. Therefore, this screen is introduced here just for reference.

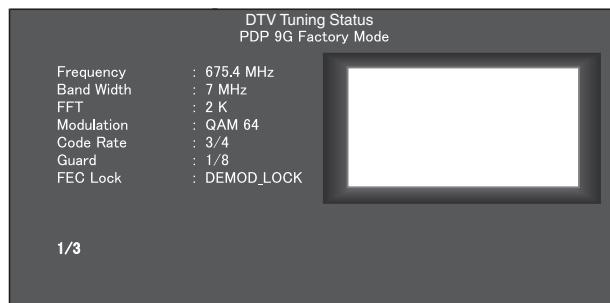


Fig.4 DTV Tuning Status (1/3) screen

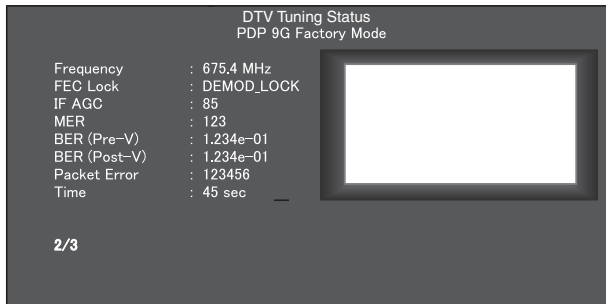


Fig.5 DTV Tuning Status screen (2/3) screen

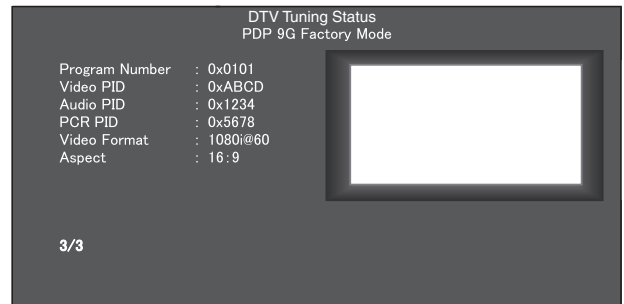


Fig.6 DTV Tuning Status screen (3/3) screen

[6] SATELLITE SCREEN

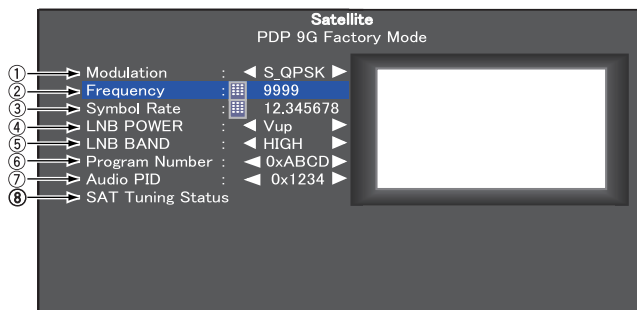


Fig.7 Satellite screen

Display the Satellite Digital broadcasting-related setting / information indication.

- ① The modulation method can be selected. (S_QPSK/S2_QPSK/S2_8PSK)
- ② The frequency can be set (0001 to 9999).
- ③ The symbol Rate can be set (1.000000 to 99.999999)
- ④ The LNB power voltage can be selected. (OFF/V/H/Vup/Hup)
- ⑤ The LNB Bandwidth can be selected. (Low/High)
- ⑥ Program Number in the same stream: Service ID can be selected.
- ⑦ Audio PID in the same stream: Audio PID can be selected.
- ⑧ The Tuning Status of Satellite Digital is displayed.

The data displayed on the SAT Tuning Status screen are as shown below:

The instructions for servicing using this screen will be provided as service information.

Therefore, this screen is introduced here just for reference.

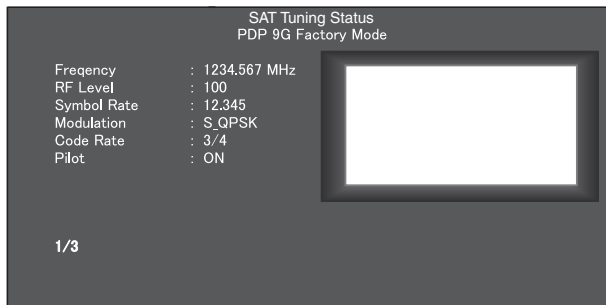


Fig.8 SAT Tunig Status (1/3) screen

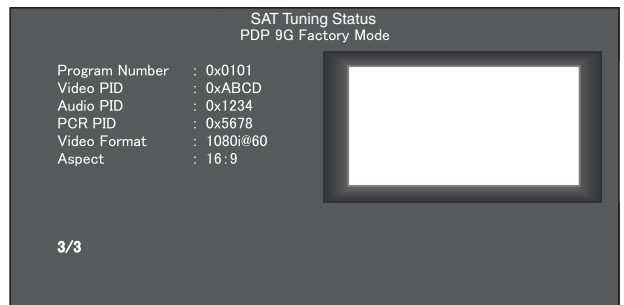


Fig.10 SAT Tunig Status (3/3) screen

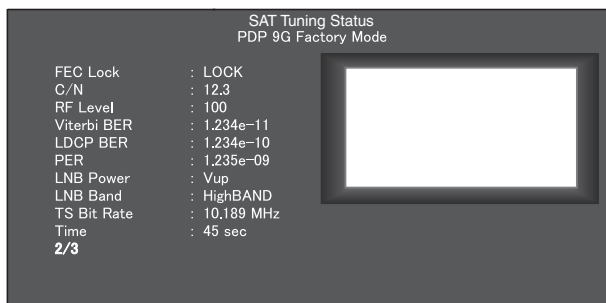


Fig.9 SAT Tunig Status (2/3) screen

[7] SOFTWARE VERSION SCREEN

The details are not described here, as this is provided for technical examination.

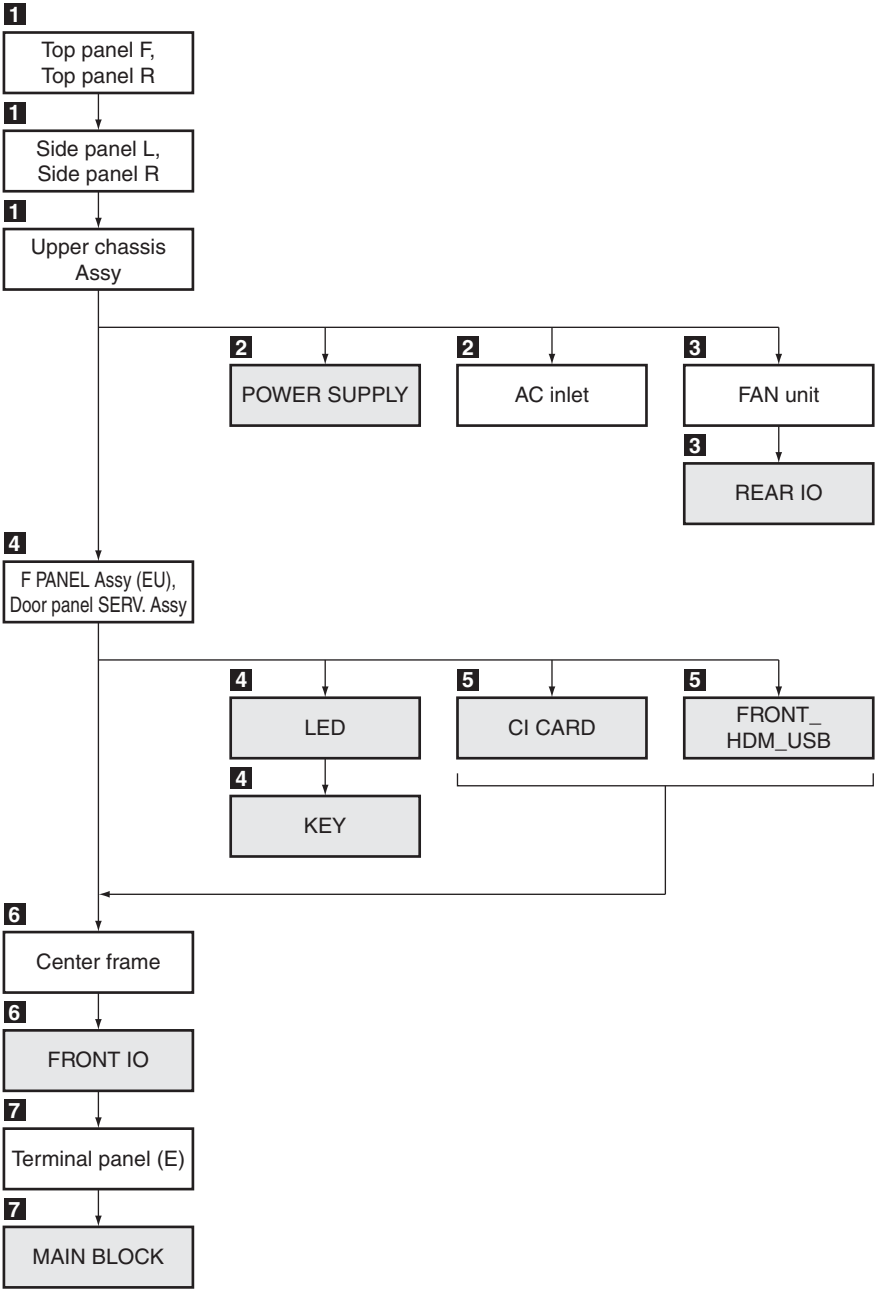
7. DISASSEMBLY

7.1 FLOWCHART OF REMOVAL ORDER

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Flowchart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

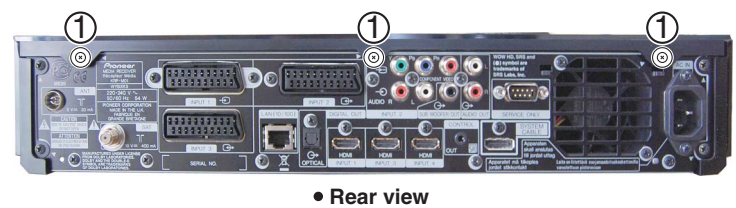
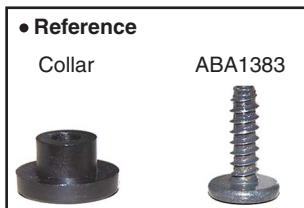
1 Exterior Section

The high-gloss resin parts of the exterior of this product are easily scratched.
During disassembly and reassembly of this product, be careful not to scratch the exterior.

Attach the protect film (GGP1121) to the inside surface of the door.
(For details on the place at which the protect film is to be attached, see “1.2 NOTES SPECIFIC TO THIS PRODUCT.”)

● Top panel F and R

- ① Remove the three collar and three screws.
(ABA1383)

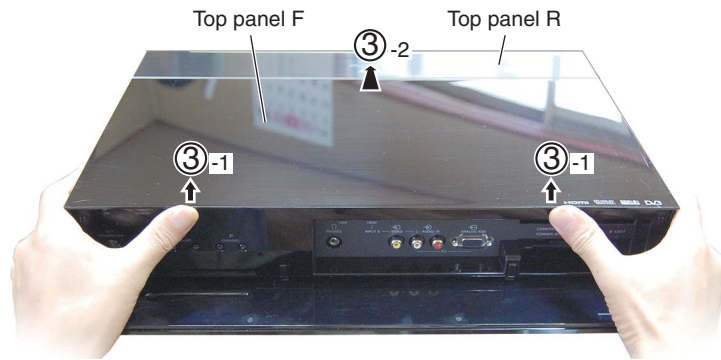


- ② Open the door panel Section.



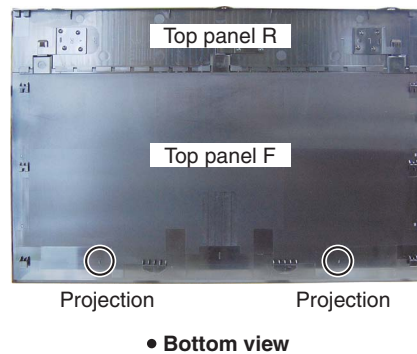
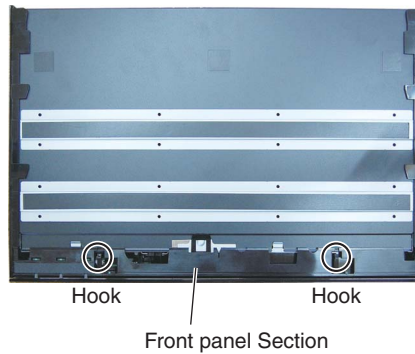
A

- ③ While pushing up at two places of the top panel using your thumbs, as shown in the photo below, to unhook the top panel, remove it by sliding it toward the rear panel.



B

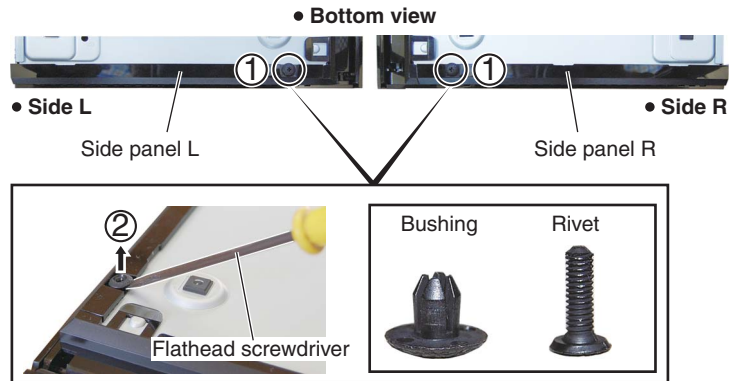
● Positions of the hooks



C

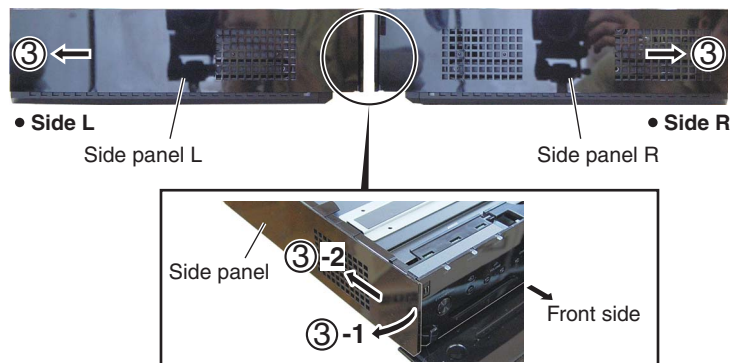
● Side panel L and R

- ① Remove the two rivets.
② Remove the two bushings, using a flathead screwdriver.



D

- ③ Remove the side panels L and R.
③-1 ③-2
Slide the side panel rearward, by stretching the front edge of the side panel outward, and remove it.



E

F

● Upper chassis Assy

- ① Remove the 14 screws. (BBZ30P060FTB)



● Rear view



● Side L

● Side R

● Screw tightening order

The other screws are random order.



- ② Remove the upper chassis Assy.

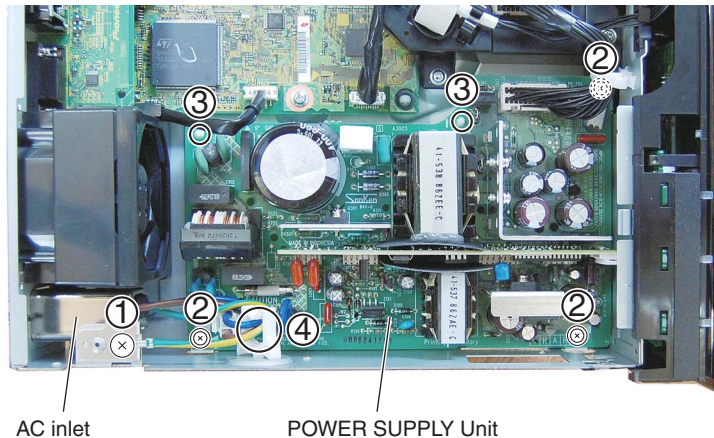


KRP-M01

A

2 POWER SUPPLY Unit

- ① Remove the one screw. (BMP40P080FSN)
- ② Remove the three screws. (BBB30P080FSN)
- ③ Remove the two circuit board spacers.
- ④ Release the jumper wire.



B

C

- ⑤ Remove the two screws. (ABZ30P080FTB)
- ⑥ Remove the AC inlet.

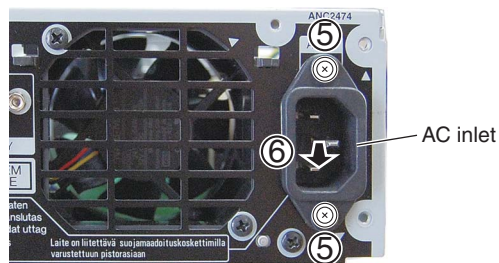
• An installation direction of the AC inlet



OK



NG

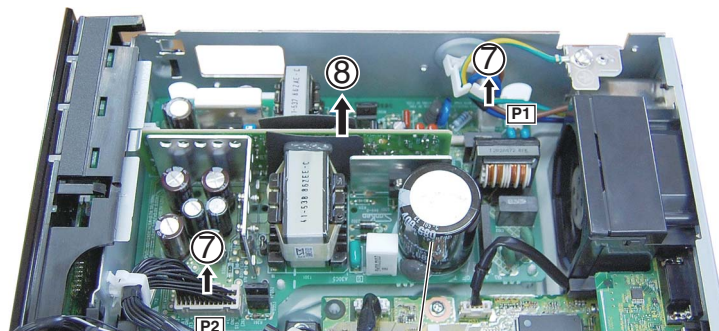


• Rear view

D

E

- ⑦ Disconnect the two connectors.
- ⑧ Remove the POWER SUPPLY Unit.

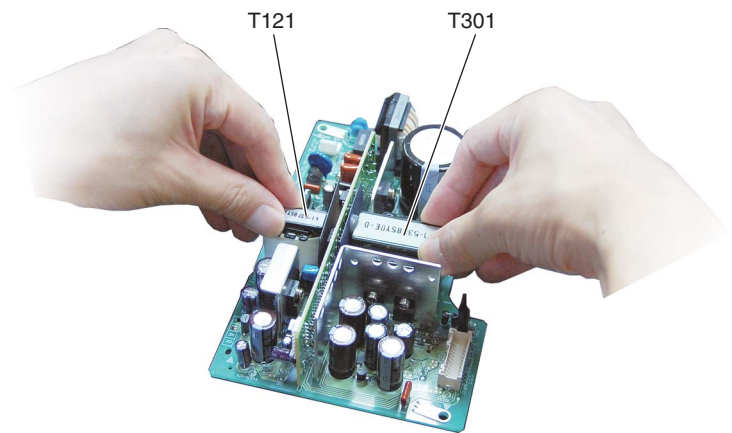


F

Notes on Removing the POWER SUPPLY Unit

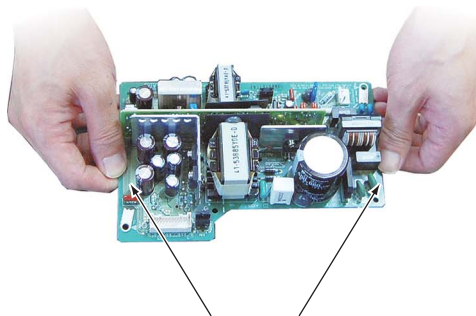
● How to lift up the POWER SUPPLY Unit

When you remove the POWER SUPPLY Unit from the chassis, first lift the board by pinching T121 and T301 transformers with your fingers. When the board is lifted up to a certain height, hold it by hand. NEVER hold the board by the radiator that is adjacent to the transformer.

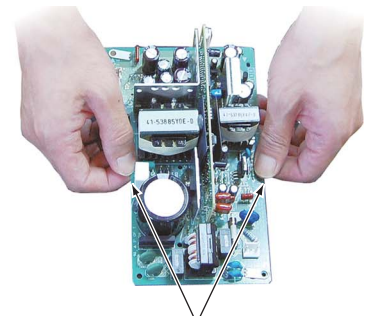


● How to hold the board after removing it from the chassis

The following two ways are recommended for holding the POWER SUPPLY Unit:

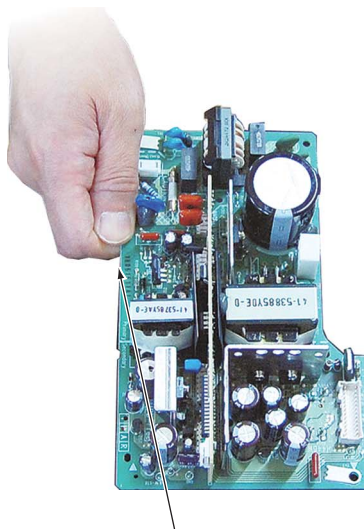


Hold at the center positions of both rims of the board.

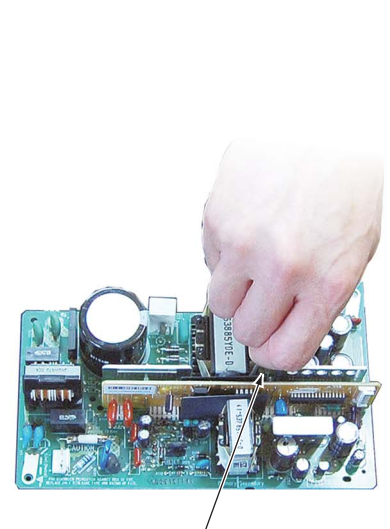


Hold at the center positions of both rims of the board.

Ways to be avoided:



NEVER hold a corner of the board with one hand.



NEVER hold the board by the radiator with one hand.

A

Note on Removing the POWER SUPPLY Unit from the Chassis and Method for Resetting Standby Power Latchup

For 3-5 minutes after the unit is turned off, residual electric charge remains in the C310 capacitor on the POWER SUPPLY Unit. Before removing the POWER SUPPLY Unit from the chassis, be sure to confirm that residual charge inside the POWER SUPPLY Unit has become sufficiently low. (Without forced discharge, residual charge that remains after 3-5 minutes will fall to one-tenth or less, which is still about 20 V. Therefore, even after the POWER SUPPLY Unit is removed, it is recommended to perform forced discharge on the POWER SUPPLY Unit, as shown below.)

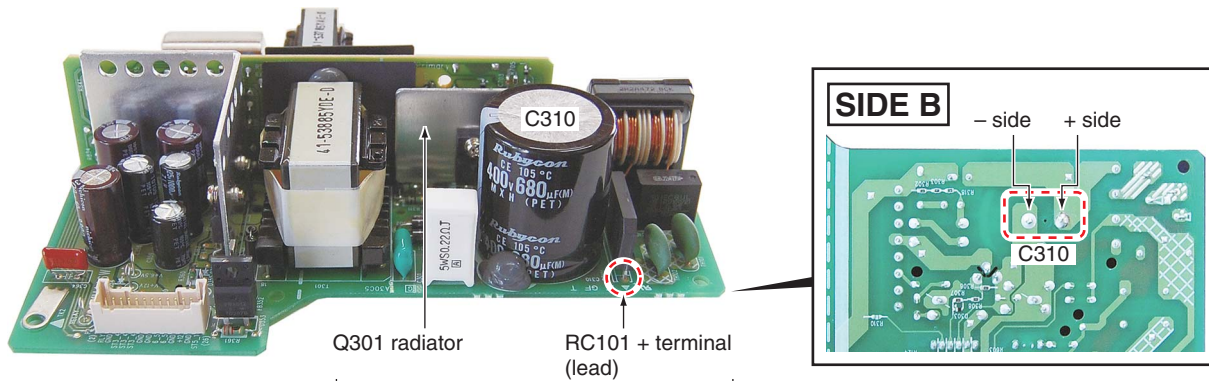
For quick removal of residual charge, forced discharge is recommended, using two 220 ohm/10 W resistors (440 ohm/20 W).

B

How to remove the POWER SUPPLY Unit

1. Make sure that the AC power cord is unplugged. Using a tester, check the voltage between the + terminal of RC101 bridge diode and Q301 radiator (equivalent to the voltage between two electrodes of C310).
2. Let the unit sit for more than 5 minutes until the voltage equivalent to that between two electrodes of C310 falls to under 20 V.
3. After checking that the voltage is under 20 V, disconnect the connectors of the POWER SUPPLY Unit and remove the POWER SUPPLY Unit.
4. Using two resistors mentioned above, completely discharge residual charge from C310.

C



After checking that the voltage at the measurement points (equivalent to the voltage between two electrodes of C310) is under 20 V, remove the POWER SUPPLY Unit. Then, completely discharge residual charge, using resistors.

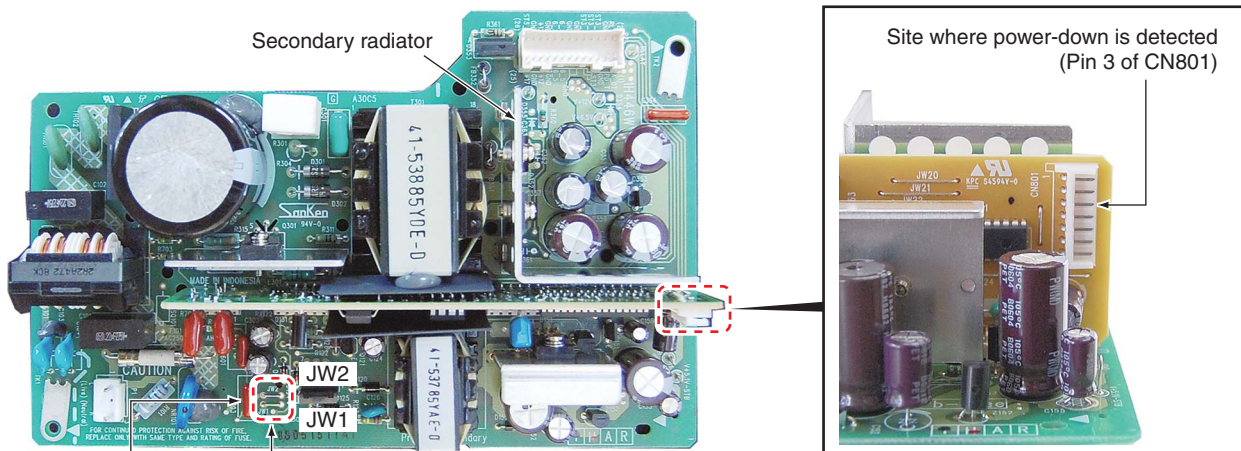
D

How to reset Standby power latchup

(In a case where the protection against Standby power excess voltage is activated)

1. After removing the causes of the malfunction, short-circuit between the JW1 and JW2 jumpers.
2. If the POWER SUPPLY Unit functions properly, after opening the above jumpers, the unit starts up.

E



F

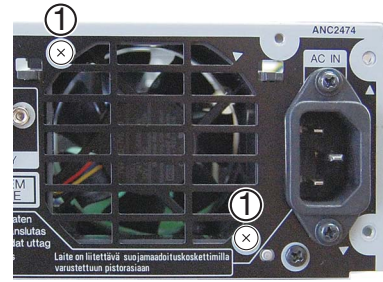
C603

To forcibly reset latchup of STBY3.4 V, short-circuit between JW1 and JW2 (near C603), using a flathead screwdriver or similar object. If the causes of the malfunction are removed, after opening the jumpers, the unit starts up.

3 REAR IO Assy

● FAN unit

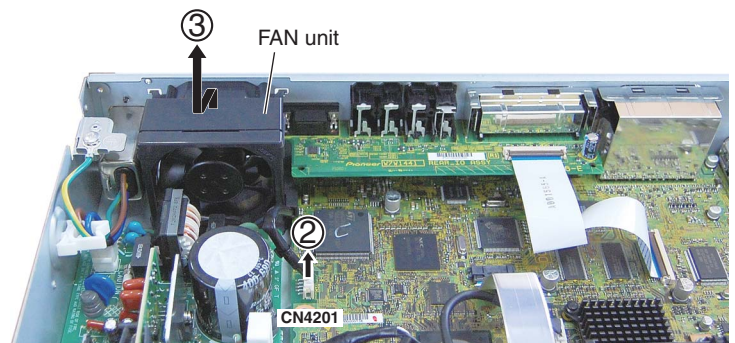
- ① Remove the two screws. (BPZ30P080FTB)



• Rear view

- ② Disconnect the one connector.

- ③ Remove the FAN unit.



● REAR IO Assy

- ① Remove the two hexagon headed screws. (ABA1382)

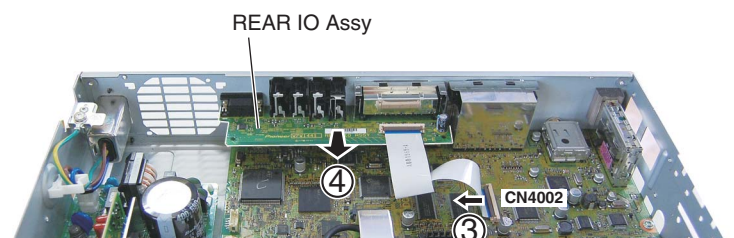
- ② Remove the four screws. (BPZ30P080FTB)



• Rear view

- ③ Disconnect the one flexible cable.

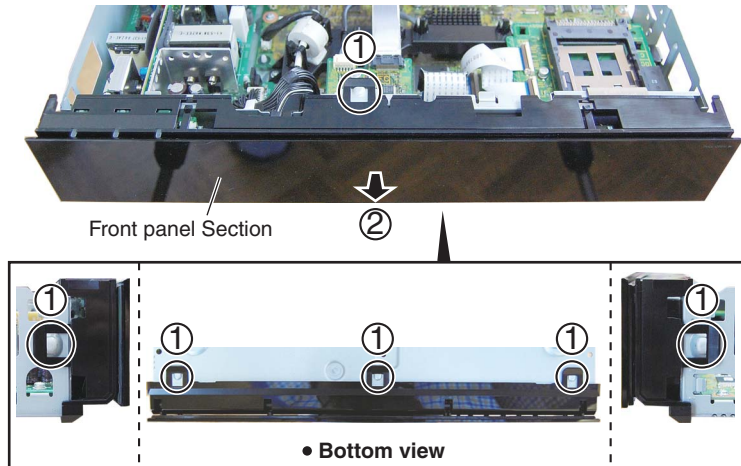
- ④ Remove the REAR IO Assy.



4 Front Panel Section

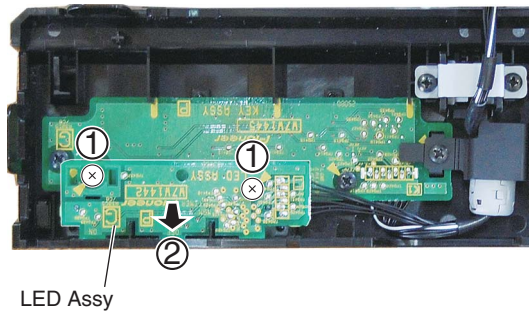
● Front panel Section

- ① Unhook the six hooks.
- ② Remove the front panel Section.



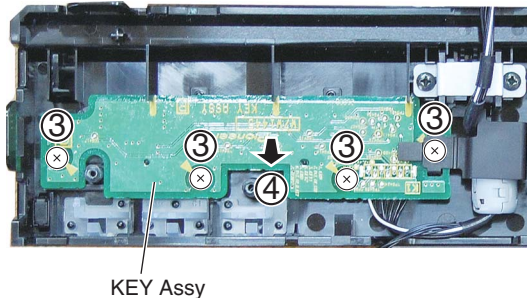
● LED and KEY Assys

- ① Remove the two screws. (BPZ30P080FTB)
- ② Remove the LED Assy.



- ③ Remove the four screws. (BPZ30P080FTB)
- ④ Remove the KEY Assy.

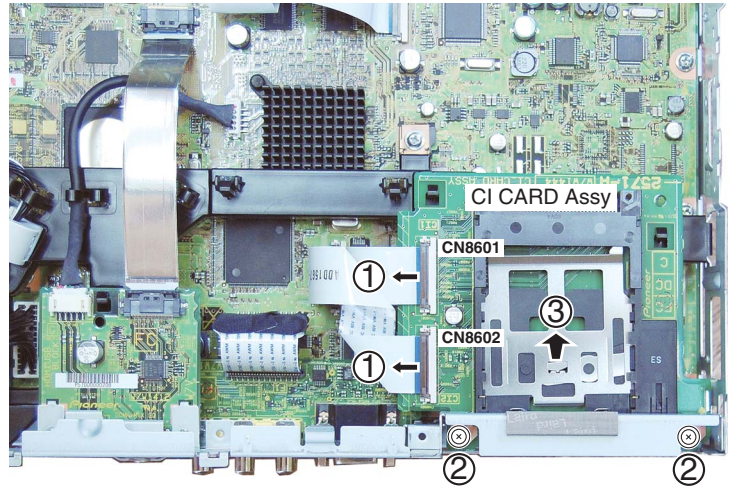
Note:
Before tightening screws, make sure that the protect film has been attached.
(For details on the place at which the protect film is to be attached, see "1.2 NOTES SPECIFIC TO THIS PRODUCT.")



5 CI CARD and FRONT_HDM_USB Assys

● CI CARD Assy

- ① Disconnect the two flexible cables.
- ② Remove the two screws. (ABZ30P060FTC)
- ③ Remove the CI CARD Assy.

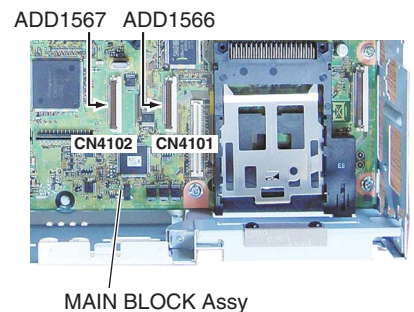
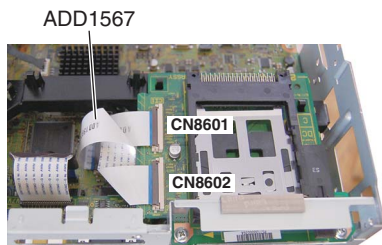
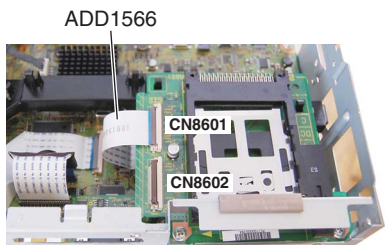


● Note on Connection of the Flexible Flat Cable for the CI CARD Assy

How to Check for Inverse Connection

After connecting the FFC cable for the CI CARD Assy, make sure that the part number printed on the upper surface of the cable is ADD1567.

ADD1567	Correctly connected
ADD1566	Inversely connected



Unit operation when the cable is inversely connected

	Activated operation	Unit operation
Unit	When activated	It starts up properly.
Slot 1: Lower slot (mounted on the MAIN BLOCK Assy)	When the circuits in the Card block are activated	They operate properly.
	When a card is inserted in Slot 1	They operate properly.
Slot 2: Upper slot (mounted on the CI CARD Assy)	When the circuits in the Card block are activated	They are not activated (no risk of being damaged, though).
	When a card is inserted in Slot 2	They are not activated (no risk of being damaged, though).



A

B

C

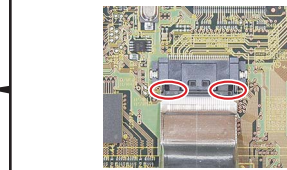
D

E

F

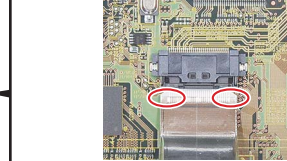
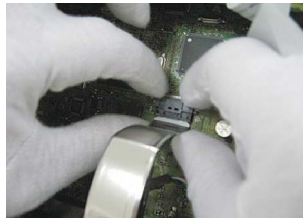
● Notes on Connecting the Shielded Flexible Flat Cable

OK



Push on the connector itself.

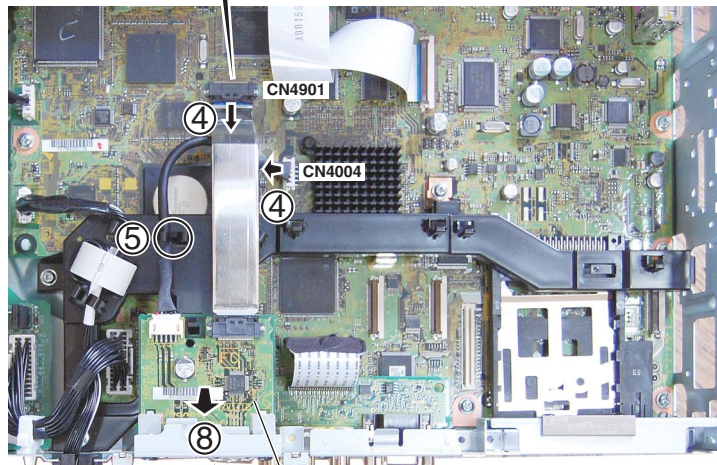
NG



Do NOT connect the connector by pushing with the cable.

● FRONT_HDM_USB Assy

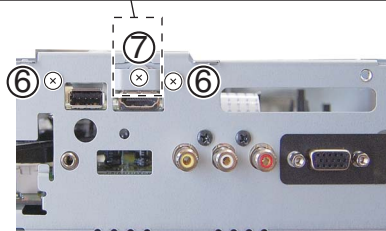
- ④ Disconnect the one flexible cable and one connectors.
- ⑤ Release the jumper wire.
- ⑥ Remove the two screws. (BBZ30P060FTB)
- ⑦ Remove the one screw. (VBA1088)
- ⑧ Remove the FRONT_HDM_USB Assy.



FRONT_HDM_USB Assy

Note:

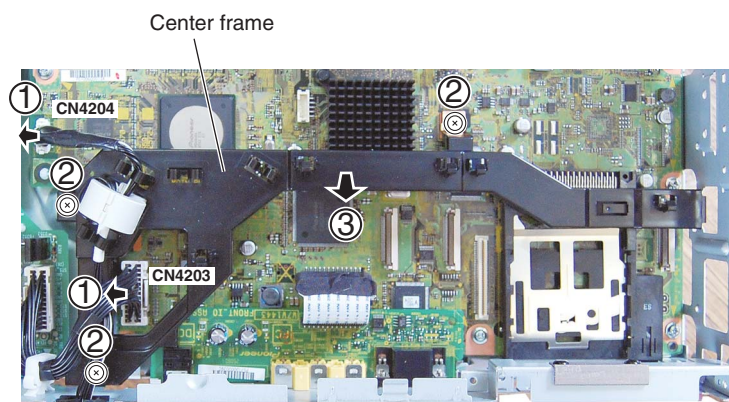
Do not use an electric screwdriver.
If the screw is over-tightened, the screw thread may be damaged.



6 FRONT IO Assy

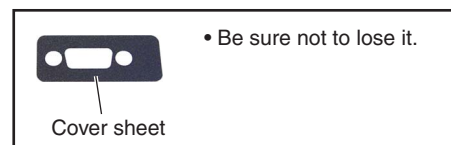
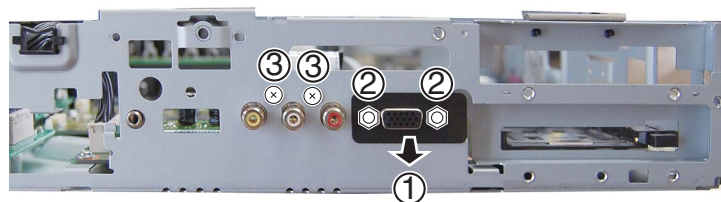
● Center frame

- ① Disconnect the two connectors.
- ② Remove the three screws. (ABA1383)
- ③ Remove the center frame.

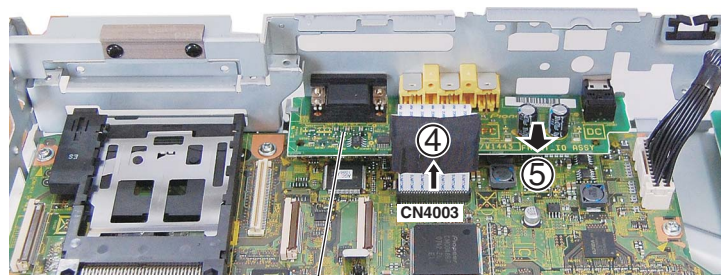


● FRONT IO Assy

- ① Remove the cover sheet.
- ② Remove the two hexagon headed screws. (ABA1382)
- ③ Remove the two screws. (BPZ30P080FTB)



- ④ Disconnect the one flexible cable.
- ⑤ Remove the FRONT IO Assy.

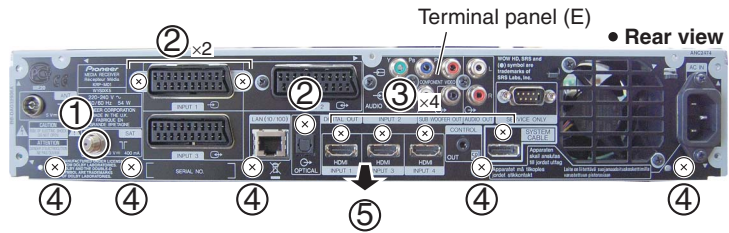


FRONT IO Assy

7 MAIN BLOCK Assy

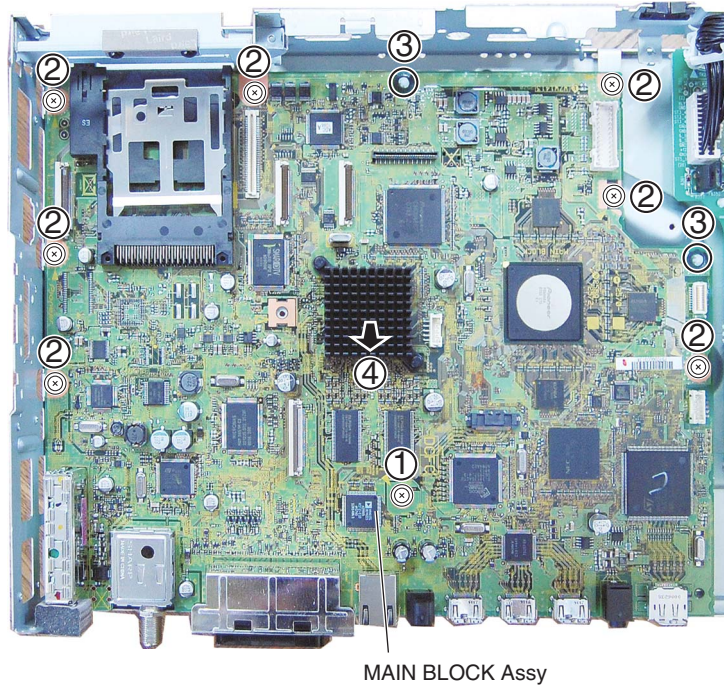
● Terminal panel (E)

- ① Remove the one nut. (BBN1005)
- ② Remove the three screws. (BPZ30P080FTB)
- ③ Remove the four screws. (BMZ30P060FTB)
- ④ Remove the five screws. (BBZ30P060FTB)
- ⑤ Remove the terminal panel (E).



● MAIN BLOCK Assy

- ① Remove the one screw. (AMZ30P060FTB)
- ② Remove the seven screws. (ABA1383)
- ③ Remove the two circuit board spacers.
- ④ Remove the MAIN BLOCK Assy.



8. EACH SETTING AND ADJUSTMENT



1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

8.1 ADJUSTMENT REQUIRED WHEN THE UNIT IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	No adjustment required
MAIN BLOCK Assy (*)	➡	Execute section [5-5] AUTO ADJUSTMENT of 6.2 [5] INITIALIZE.
Other assemblies	➡	No adjustment required

(*) : When replacing the MAIN BLOCK Assy, be sure to perform the FINAL SETUP.

■ Replacement of the whole Assy is required when one of the following part on the corresponding Assy is in failure

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AXY1204	POWER SUPPLY Unit	U0003	—	—	The maker forbids Pioneer from repairing the Assy.
AWV2570 AWV2572	MAIN BLOCK Assy	IC6403	DTV Flash	S29GL512P10TFIR1-K (AGC1089)	Because ID data (MAC address and data on keys) have been stored
		IC6001	SYSTEM IC (BCM7404)	BCM7404XKPB11G-K	Because adjustments and data writing at the level of production line are required after replacement
		IC5002	HDCP EEPROM	BR24L02FV-W	
		IC5003	HDCP EEPROM	BR24L02FV-W	
		IC5004	HDCP EEPROM	BR24L02FV-W	
		IC7301	FRONT HDCP EEPROM	BR24L02FV-W	
		IC7004	EMMA2 EEPROM	BR24L64F-W	
		IC6701	ARIA FLASH	S29GL016A90TFIR2-K (AGC1088)	
		IC6811	IF UCOM	AGC1086	
		IC7202	EMMA2 FLASH	S29GL032N90TFIO4-K (AGC1087)	
		IC6201	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6202	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6203	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
		IC6204	BCM DDR SDRAM	HY5DU121622DTP-D43-K	
AWV2571 (AWW1443)	FRONT_IO Assy	IC8501	PC EEPROM	BR24L01AFJ-W	Because adjustments and data writing at the level of production line are required after replacement

A

Part whose replacement is difficult

PCB Assy No.	Assy Name	Ref No.	Function Name	Part No.	Reason
AWV2570 AWV2572	MAIN BLOCK Assy	IC7003	SYSTEM IC (EMMA2)	UPD61123F1-100KA3A-K	Because these ICs are packaged in BGA
		IC6501	ASIC (ARIA)	PD6568A-K	
		IC6702	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6703	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC6704	DDR SDRAM (ARIA)	EDD1232ABBH-5C-E-K	
		IC4801	ADC	AD9985KSTZ	Because these ICs require readjustment after replacement
		IC5101	AV SW	R2S11006FT	
		IC5501	RGB SW	R2S11001FT	
		IC4702	VDEC	CM0048BF	
		U5301	DVB-T	AXF1191	Because the part has many pins (from G9, through-hole print will be adopted)
		U5201	DVB-S2	AXF1195	
		JA5601	CI connector	AKP1341	Because the part has many pins
		JA7502	Scart connector	AKP1265	
		JA8801	Scart connector	AKP1266	
		IC4901	HDMI	SII9135CTU-K	Because a radiation pad is provided
		IC5201	S2 demodulation IC	STV-0903	
		IC4601	Regulator	LTC3407EMSE-2	
		IC4501	Regulator	BD8624EFV	
		IC4503	LNB Regulator	LNBH23PP-TBB	

B

C

D

E

F

Adjustment Procedures After a Part that Requires Readjustment is Replaced

Execute section "[5-5] AUTO ADJUST. <=>" of "6.2 [5] INITIALIZE."

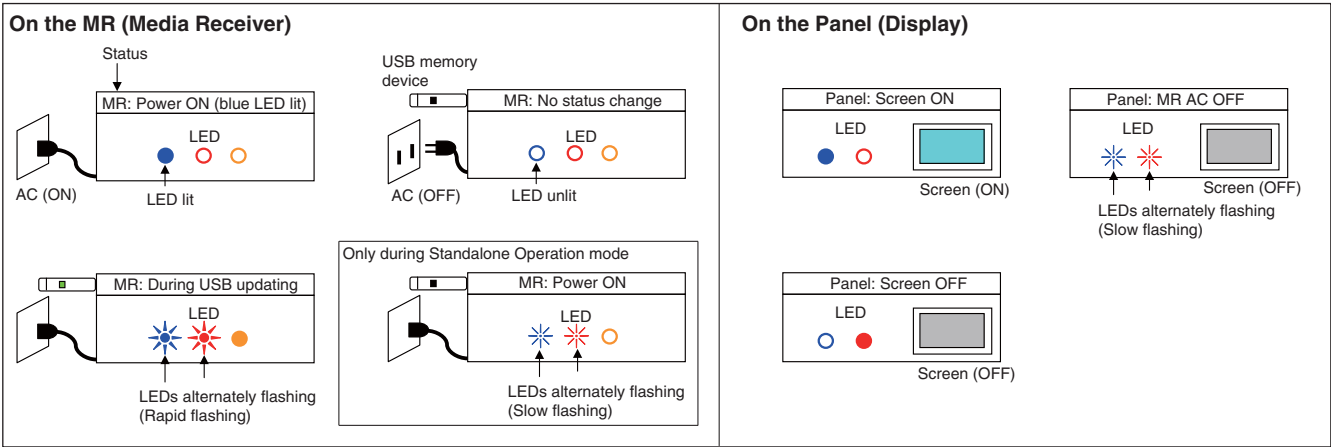
■ Preparation

Expand the image-file folder for USB updating in the root directory of the USB memory device.

Example: Folder construction after expansion in the root directory of the USB memory device

(With the nonencrypted folder)	[update] - boot.img - update.ctl - update.iso - update.lst	An encrypted image-file folder for USB updating will be released for general users.
(With the encrypted folder)	[update] - boot.img - update.ctl - update.enc - update.key - update.lst	

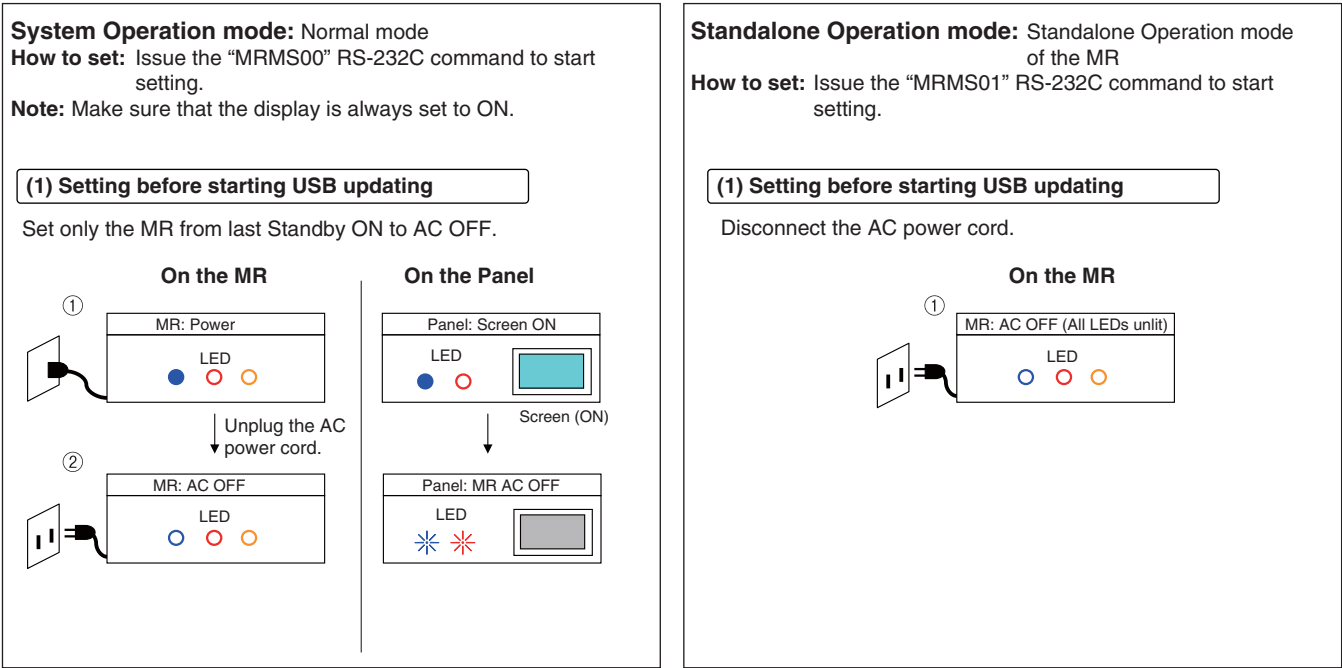
■ Description of the figures



■ Procedures

The methods for USB updating in System Operation mode and Standalone Operation mode of the MR are described below.

Note: Make sure that the display is always set in System Operation mode.

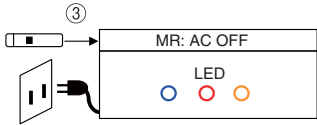


A

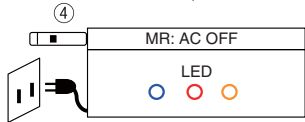
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

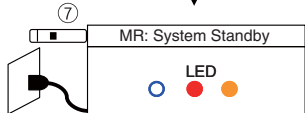
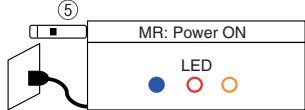
On the MR



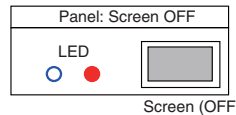
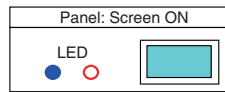
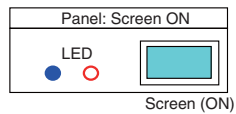
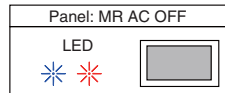
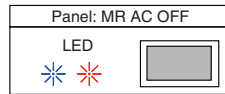
↓ Connect a USB memory device.



↓ Plug in the AC power cord.



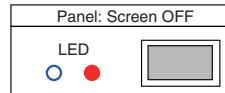
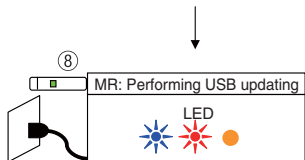
On the Panel



Note: If you interrupt the updating procedure in this step, updating is not started, and normal startup will begin.

NEVER use the remote control unit. (Especially DO NOT use the Power key.)

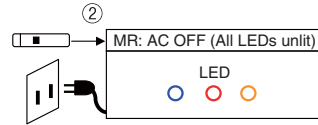
[If you use any key on the remote control unit in Steps ⑤ to ⑦]
If the unit does not shift to Step ⑧, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑧, continue the updating procedures as described.



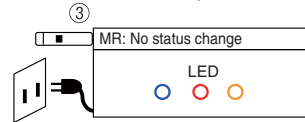
(2) Procedures for USB updating

Connect a USB memory device, then plug in the AC power cord.

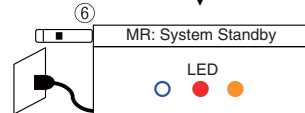
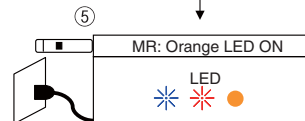
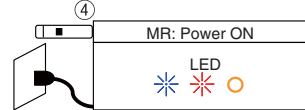
On the MR



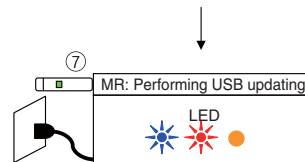
↓ Connect a USB memory device.



↓ Plug in the AC power cord.

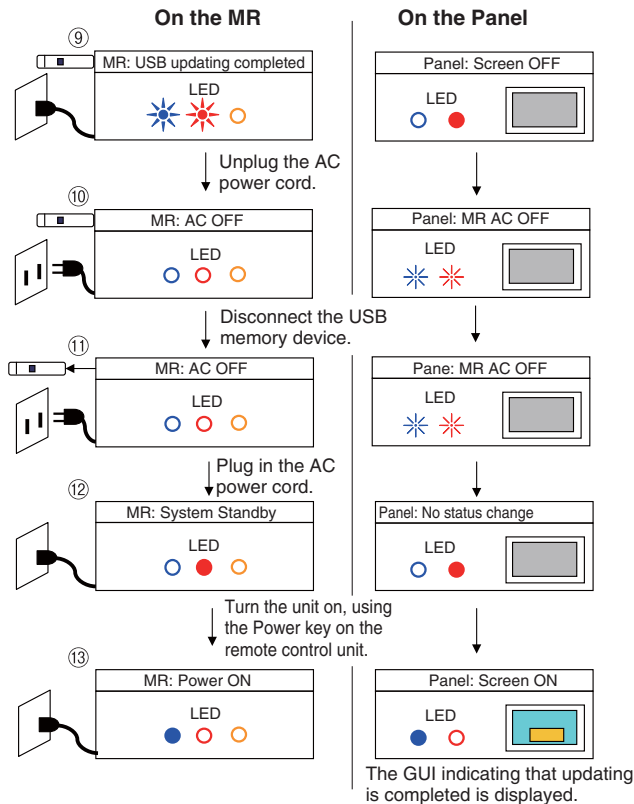


[If you use any key on the remote control unit in Steps ④ to ⑥]
If the unit does not shift to Step ⑦, disconnect the USB memory device then try the procedures from the beginning.
If the unit shifts to Step ⑦, continue the updating procedures as described.



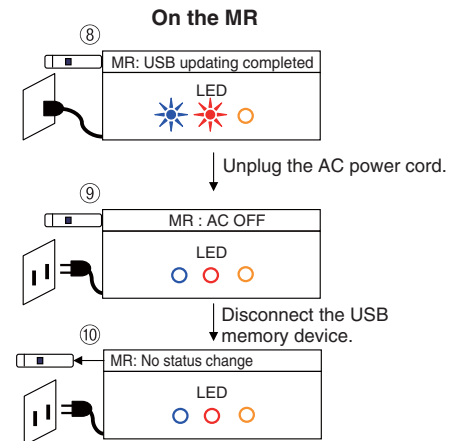
(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



(3) Completion procedures for USB updating

After USB updating is completed, perform the following steps (unplug the AC power cord, disconnect the USB memory device, then plug the AC power cord back in).



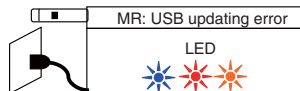
Return the MR to System Operation mode, by sending a command via the RS-232C connector.

How to set: Send the "MRMS00" command via the RS-232C connector.

In Standalone Operation mode of the MR, the GUI indicating that updating is completed is not displayed.

List of frequency of LED (orange) flashing when updating fails

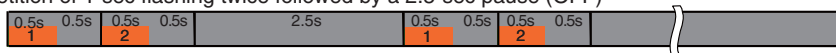
If updating is interrupted, the orange LED flashes to warn you of the error.



Frequency of Orange LED Flashing	Error Content	Details
1	(Not used)	
2	Version error	The same version or a newer version of software has already been loaded.
3	USB update startup error	Startup of USB updating failed.
4	DTV Update Error	Updating of the DTV software failed.
5	MAIN Download Error	Updating of the MAIN microcomputer software failed.
6	ARIA Download Error	Updating of the ASIC software in the previous stage failed.
7	ZEUS Download Error	Updating of the ASIC software in the later stage failed.
8	Module Download Error	Updating of the module microcomputer software failed.
9	IF Download Error	Updating of the IF microcomputer software failed.
10	USB disconnection	Abnormality in the USB memory device
11 to 13	Reserved	-
14	Destination error	The software for a different destination (Europe/North America/Australia) was used for updating.

Example: In a case where the orange LED flashes twice (version error)

Repetition of 1-sec flashing twice followed by a 2.5-sec pause (OFF)



Under the following conditions, USB updating procedures will be interrupted at Step 5 above, and normal startup will begin, but the LED does not flash for error indication.

Conditions under which the LED will not flash for error indication

- Any USB updating file is damaged
- Not all USB updating files are stored in the USB memory device
- The USB updating files are modified
- The USB memory device is defective

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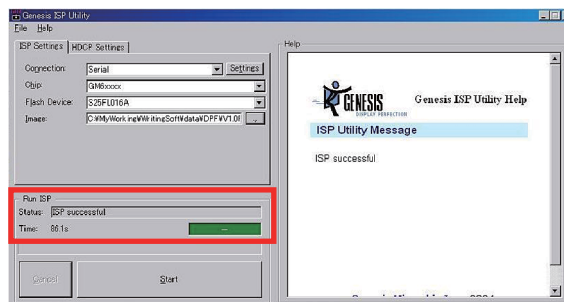


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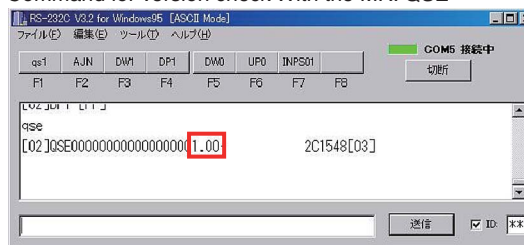
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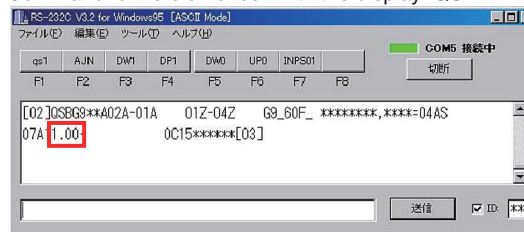
-
- The screenshot displays the Genesis ISP Utility software interface. A red rectangular box highlights a modal dialog box titled "Genesis ISP Utility". The dialog contains the text "Entering debug mode. Please reset the board and press OK." and two buttons: "OK" and "キャンセル" (Cancel). In the background, the main application window is visible, featuring the Genesis logo, the title "Genesis ISP Utility Help", and a "Welcome!" message. The main window also includes a "Help" button in the top right corner and a "Show" button at the bottom right. The interface is in Japanese, with labels like "ISP Settings", "NDCP Settings", "Connection", "Chip", "Flash Device", and "Inuse" visible on the left side of the main window.



- Command for version check With the MR: QSE



Command for version check with the display: QSB



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KRP-M01


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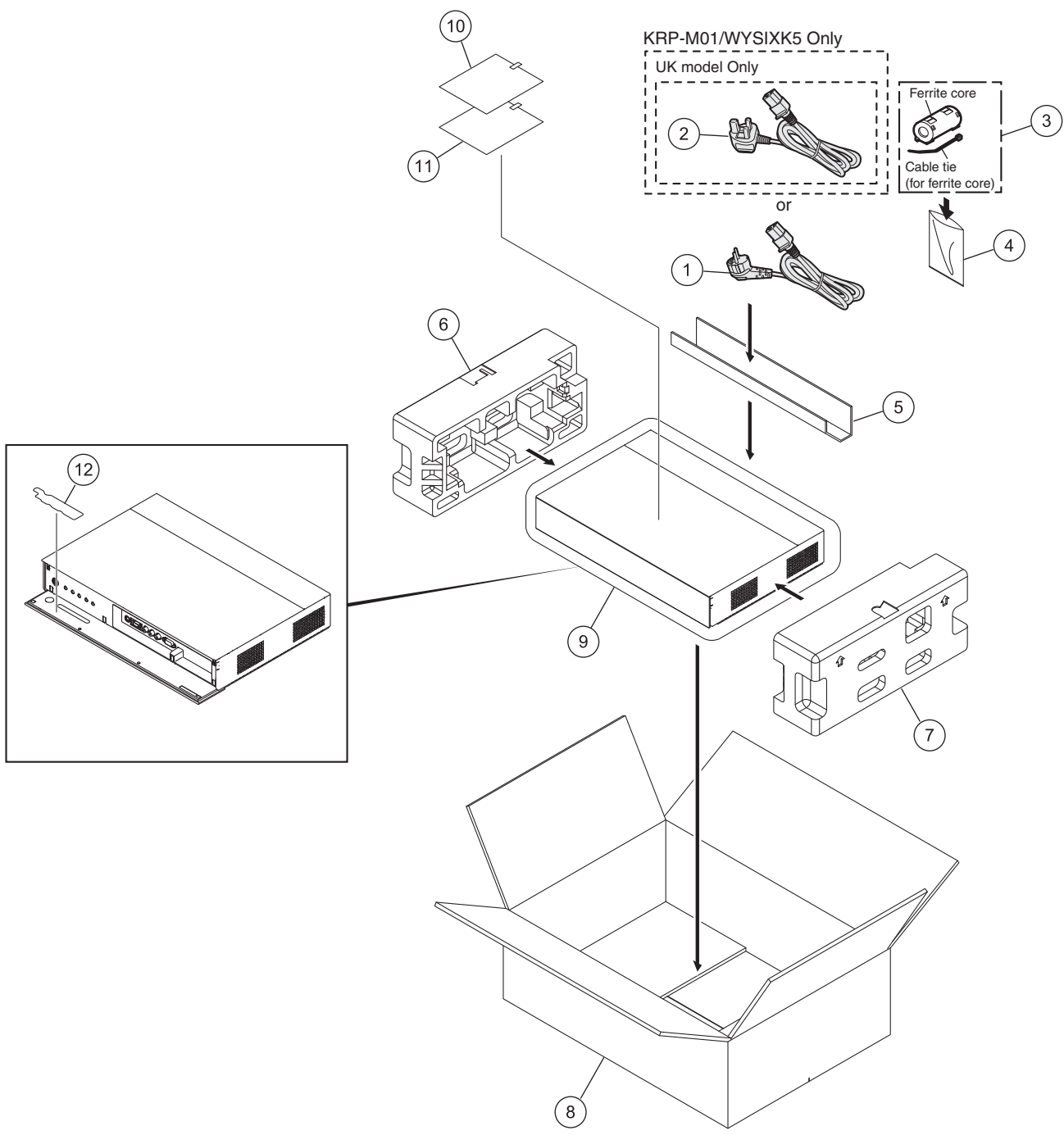
3

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9. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
⚠	1	Power Cable	ADG1214
⚠	2	Power Cable	See Contrast table (2)
⚠	3	Ferrite Core (L5208)	ATX1039
	4	Vinyl Bag	AHG1337
	5	ACC Carton	See Contrast table (2)
	6	Pad L	See Contrast table (2)
	7	Pad R	See Contrast table (2)
	8	Carton	See Contrast table (2)
	9	Mirror Mat	AHG1420
	10	Caution Card	See Contrast table (2)
	11	Film Caution Card	See Contrast table (2)
	12	Protect Film	GGP1121

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

<u>Mark</u>	<u>No.</u>	<u>Symbol and Description</u>	<u>KRP-M01/WYSIXK5</u>	<u>KRP-M01/WYSXJ5</u>
⚠	2	Power Cable	ADG1223	Not used
	5	ACC Carton (E)	AHD3677	Not used
	5	ACC Carton (G)	Not used	AHD3679
	6	Pad L (E)	AHA2735	Not used
	6	Pad L (G)	Not used	AHA2739
	7	Pad R (E)	AHA2736	Not used
	7	Pad R (G)	Not used	AHA2740
	8	Carton (E)	AHD3674	AHD3725
	10	Caution Card	ARM1439	ARM1440
	11	Film Caution Card	ARM1448	ARM1449

9.2 EXTERIOR SECTION

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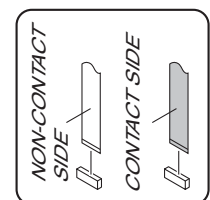
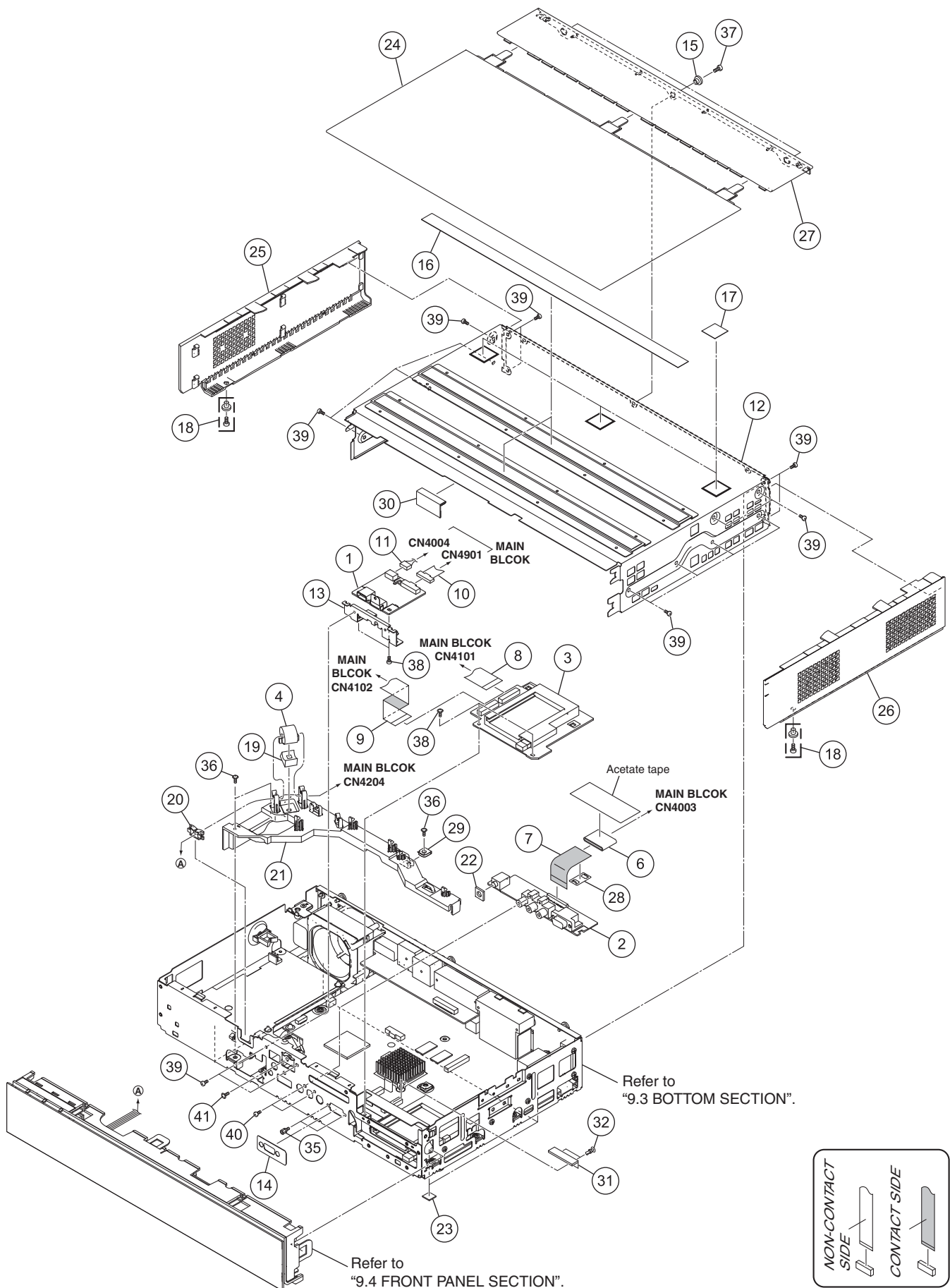
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(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	FRONT_HDM_USB Assy	AWW1412	21	Center Frame	AMR3844
2	FRONT IO Assy	AWW1443	⚠ 22	Gasket HP	ANK1994
3	CI CARD Assy	AWW1444	23	Rubber Foot	VEB1349
⚠ 4	Ferrite Core (F1001)	ATX1034	24	Top Panel F	AAK2940
5	•••••		25	Side Panel L	AAK2941
⚠ 6	Ferrite Core (F1)	ATX1073	26	Side Panel R	AAK2942
7	Flexible Cable (J201)	ADD1564	27	Top Panel R	AAK2946
8	Flexible Cable (J204)	ADD1566	28	Ferrite Stopper	AEC1981
9	Flexible Cable (J205)	ADD1567	⚠ 29	Earth Plate MAIN	ANG3219
10	30P Shield FFC (J101)	ADF1042	⚠ 30	Gasket UP2	ANK1999
11	USB Cable (J102)	ADX3713	⚠ 31	Gasket CI	ANK1996
12	Upper Chassis Assy	See Contrast table (2)	32	Rivet A	BEC1158
13	PCB Holder	See Contrast table (2)	33	•••••	
14	Cover Sheet	AAK2850	34	•••••	
15	Collar	ABN1095	35	Hexagon Headed Screw	ABA1382
16	Upper Cushion	AEB1504	36	Screw	ABA1383
17	Top Cushion	AEB1505	37	Screw	ABA1391
18	Scrivet	AEC1657	38	Screw	ABZ30P060FTC
19	Ferrite Core Holder	AEC1818	39	Screw	BBZ30P060FTB
20	Edge Saddle	AEC1946	40	Screw	BPZ30P080FTB
			41	Screw (FE)	VBA1088

(2) CONTRAST TABLE

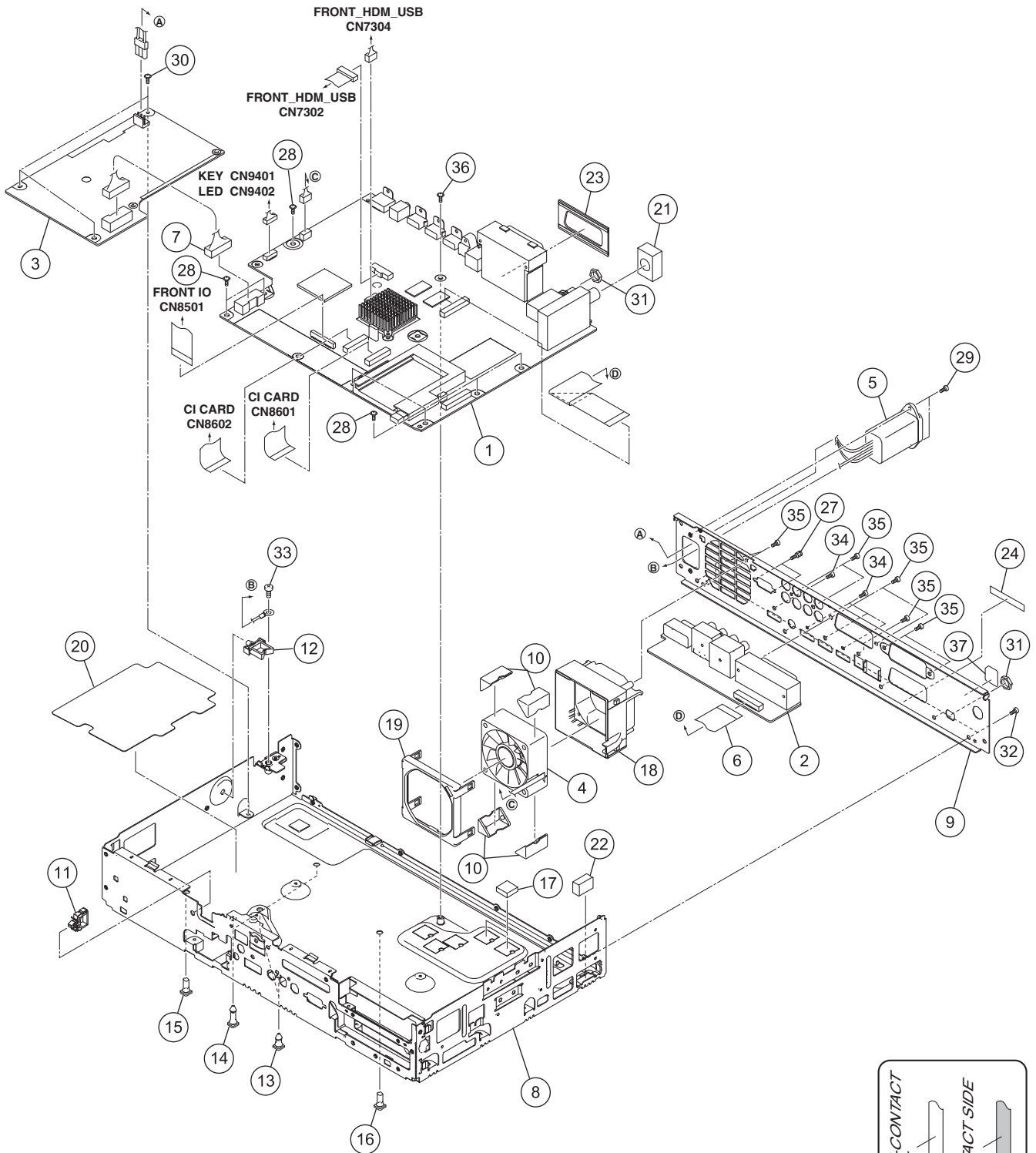
KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	12	Upper Chassis Assy	ANA2187	ANA2224
	13	PCB Holder	ANG3186	ANG3217

9.3 BOTTOM SECTION



Cleaning paper :
GED-008



(1) BOTTOM SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	MAIN BLOCK Assy	AWW1413	⚠	21	Gasket EU	ANK1972
	2	REAR IO Assy	AWW1441		22	Gasket MA	ANK1985
⚠	3	POWER SUPPLY Unit	AXY1204	⚠	23	Gasket SC	ANK1989
⚠	4	DC FAN Motor 60 x 25L	AXM1068	NSP	24	Serial Label	ARW1100
⚠	5	AC Inlet (CN1)	AKP1339		25	•••••	
	6	Flexible Cable (J203)	ADD1565		26	•••••	
	7	26P Housing Wire (J111)	ADX3674		27	Hexagon Headed Screw	ABA1382
	8	Base Chassis Assy	See Contrast table (2)		28	Screw	ABA1383
	9	Terminal Panel (E)	See Contrast table (2)		29	Screw	ABZ30P080FTB
	10	Floating Rubber 60	AEB1410		30	Screw	BBB30P080FSN
	11	Reuse Clamp	AEC2129		31	Washer Faced Nut	BBN1005
	12	Reuse Wire Saddle	AEC2134		32	Screw	BBZ30P060FTB
	13	Circuit Board Spacer	AEC2150		33	Screw	BMP40P080FSN
	14	Circuit Board Spacer	AEC2151		34	Screw	BMZ30P060FTB
	15	Circuit Board Spacer	AEC2152		35	Screw	BPZ30P080FTB
	16	Circuit Board Spacer	AEC2163		36	Screw	AMZ30P060FTB
	17	Silicon Sheet	AEH1182	NSP	37	Gost-R Label	ARW1126
	18	FAN Holder 60 A	See Contrast table (2)				
	19	FAN Holder 60 B	See Contrast table (2)				
	20	Insulation Sheet	AMR3891				

(2) CONTRAST TABLE

KRP-M01/WYSIXK5 and WYSXJ5 are constructed the same except for the following:

Mark	No.	Symbol and Description	KRP-M01/WYSIXK5	KRP-M01/WYSXJ5
	8	Base Chassis Assy	ANA2186	ANA2225
	9	Terminal Panel (E)	ANC2474	ANC2480
	18	FAN Holder 60 A	AMR3845	AMR3918
	19	FAN Holder 60 B	AMR3846	AMR3919

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9.4 FRONT PANEL SECTION

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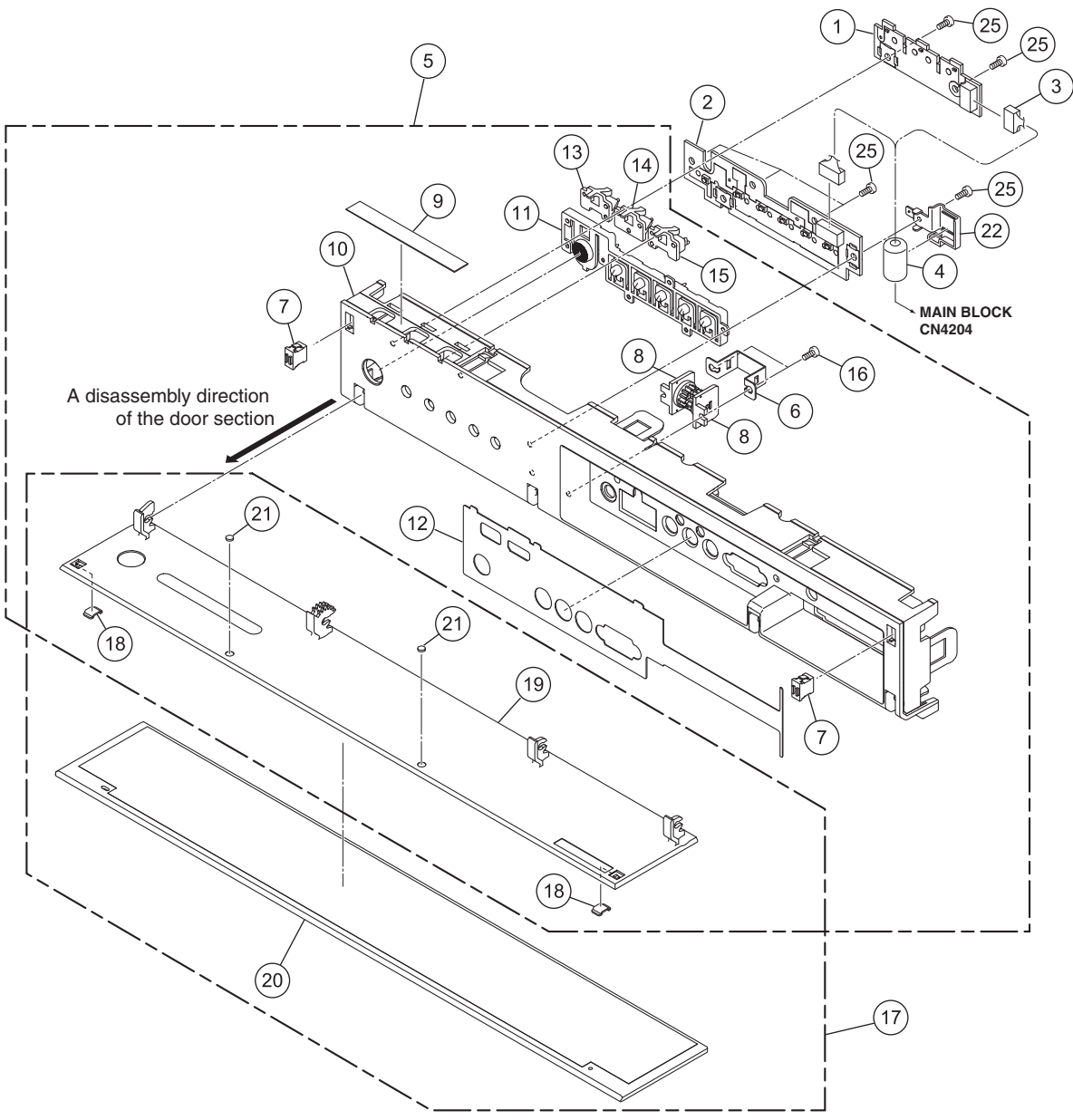
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■ When Replacing the F PANEL Assy (E)

When replacing the F PANEL Assy (E), discard the following parts of the new Assy kit for service and use the parts from the original door panel:

No.18	Door catcher
No.19	Door base
No.21	Door cushion

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■ Reassembly Procedures for the Door Panel Service Kit

• Component parts of the GXX1283 Door Panel Service Kit

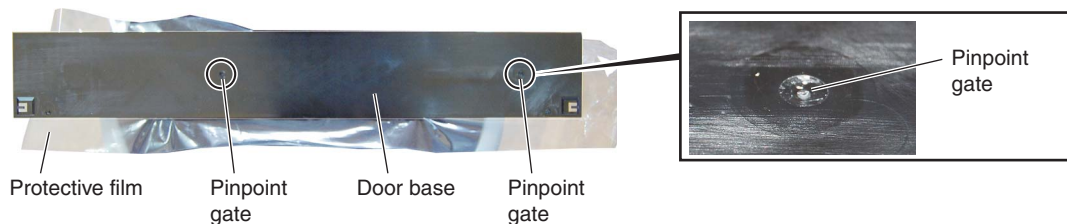
B

No.18	Door catcher (x2)
No.19	Door base (x1)
No.20	Door panel (x1)
No.21	Door cushion (x2)

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- ① Check that two marks of pinpoint gates do not protrude from the surface of the door base to which the door panel is to be attached.
Do NOT peel off the protective film of the door base in this step.
Peel it off after all the reassembly procedures are completed.

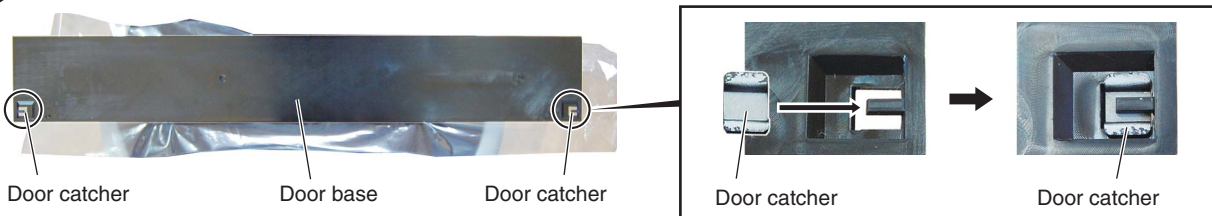
C



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- ② Attach the two door catchers.

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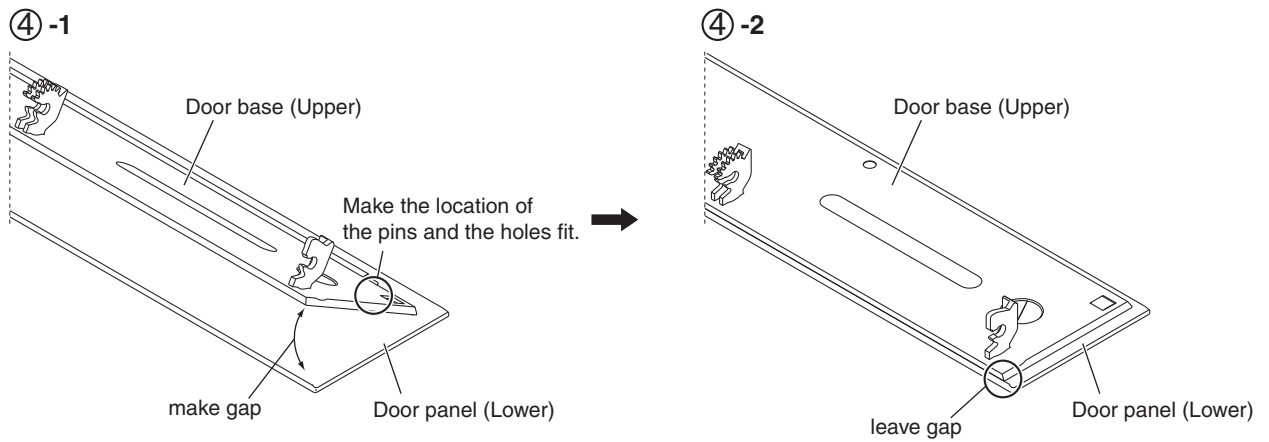
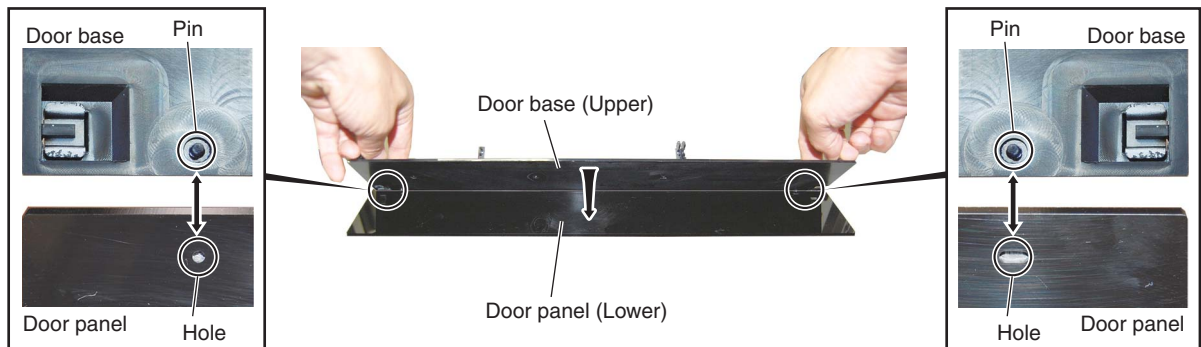
■

- ③ Peel off the separator of double-back tape on the door panel.
Do NOT peel off the protective film on the exterior surface of the door panel in this step.
Peel it off after all the reassembly procedures are completed.

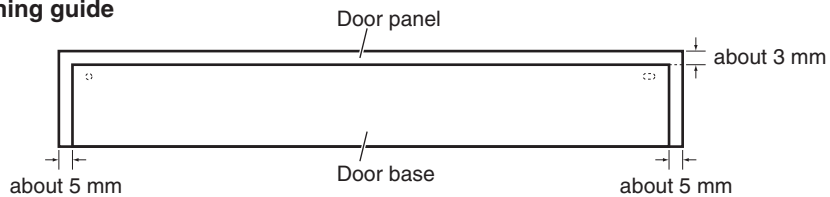
E

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- ④ Align the two positioning pins of the door base with the holes in the door panel.
When positioning, leave gaps between the door panel and door base, as shown in the figure below:



Positioning guide



- ⑤ Stick the door base and door panel together, by pressing them all over.

- ⑥ Attach the two door cushions.